ATTACHMENT T

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
AND
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX

MONITORING AND REPORTING PROGRAM NO. 1492
FOR THE
CITY OF LOS ANGELES
(Hyperion Treatment Plant)

Order No. R4-2005~~2004~~-XXXX
NPDES No. CA0109991

The Discharger shall implement this monitoring and reporting program on the effective date of this Order and permit:

I. FRAMEWORK FOR MONITORING

A. Pursuant to Title 40 of the Code of Federal Regulations (40 CFR) 122.41(j) and 122.48(b), the monitoring program for a discharger receiving a National Pollutant Discharge Elimination System (NPDES) permit must determine compliance with NPDES permit terms and conditions including TMDL requirements incorporated into the permits, and demonstrate that State water quality standards are met.

B. In January 1999, Hyperion Treatment Plant's (Hyperion) benthic sampling program was modified from an equidistant depth contour-based grid to a combination fixed station/random station array. This change allowed the assessment of more subtle changes in the benthic community as a result of the change from partial secondary to full secondary effluent (December 1998). Impacts associated with the 5-mile outfall discharge have decreased in spatial extent since the 1980s commensurate with improved effluent quality. Sampling with the combination fixed station/random station array has also shown an improvement in benthic communities around the outfall and some reduction in levels of metals in sediments (Marine Monitoring in Santa Monica Bay, Biennial Assessment Report for the Period January 2001 through December 2002, City of Los Angeles, July, 2003).

C. The City of Los Angeles (City or Discharger) has been monitoring Santa Monica Bay shoreline stations from Malibu to Palos Verdes on a daily basis at a minimum of 16 stations for bacterial contamination since the late 1940's. This monitoring program originated to ensure that public health was protected from contamination by Hyperion effluent discharged into Santa Monica Bay. Since construction of the 5-mile outfall (Discharge Serial No. 002) in the 1950's, data from over 40 years of daily monitoring for total and fecal coliform and over 10 years of monitoring data for enterococcus at these stations have shown that Hyperion's 5-mile outfall has not been observed to affect water quality at these shoreline stations during a variety of

oceanographic and meteorological conditions. Instead, test results showed that contamination originates from land via storm drain flows into Santa Monica Bay particularly during events such as rainfall, illicit discharges, and sewage spills. Recognizing this key finding, several organizations including the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), City of Los Angeles, Los Angeles (LA) County Department of Public Works, LA County Department of Health Services, Heal the Bay, and the United States Environmental Protection Agency (USEPA), in a 1995 joint effort, relocated Hyperion's 18 daily shoreline stations to form the backbone of the Santa Monica Bay shoreline monitoring for stormwater and urban runoff contamination. This daily monitoring program is supplemented by weekly monitoring at additional stations by LA County Department of Health Services.

The results of daily and weekly monitoring have been used by LA County Department of Health Services to post warning signs at the beaches or restrict beach access whenever bacterial indicator thresholds have been exceeded. These results have also been successfully used by Heal the Bay to grade the Santa Monica Bay beaches in its "Report Card", which is posted on its website.

Santa Monica Bay shoreline monitoring requirements in the LA County Stormwater Monitoring (MS4) Permit, issued on December 13, 2001, call for monitoring of 18 water quality stations six days per week to determine compliance with the State of California's bathing water standards for public beaches and ocean water-contact sport areas, and the related impacts of discharges from storm drains and piers. Since the focus of the shoreline monitoring program has changed from monitoring the impact of Hyperion's 5-mile outfall to that of urban runoff and storm water, shoreline monitoring is no longer included in this NPDES permit.

In 2002, the Regional Board adopted two Total Maximum Daily Loads (TMDLs) to address bacterial contamination at the beaches along Santa Monica Bay (see Finding 32). The City of Los Angeles, as the owner of Hyperion Treatment Plant, is identified as a responsible jurisdiction in these TMDLs. In these TMDLs, Hyperion Treatment Plant is assigned a waste load allocation (WLA) of zero days of exceedance of the single sample bacterial objectives during all three identified periods – summer dry weather, winter dry weather and wet weather. Hyperion's WLA of zero exceedance days requires that no discharge from Hyperion's outfall may cause or contribute to any exceedances of the single sample bacteria objectives at the shoreline compliance points identified in the TMDL and, subsequently, in the approved Coordinated Shoreline Monitoring Plan (dated April 7, 2004) submitted by responsible agencies and jurisdictions under the TMDLs. Because it has been demonstrated that the plume from the outfall does not come into contact with the shoreline and has never been detected less than 2.5 km from shore (see F. below), this Order and permit does not require shoreline monitoring, as the monitoring data from the ~~inshore~~ shoreline monitoring sites is required by the MS4 permit ~~(discussed in D. below)~~ and will be used to demonstrate compliance with the WLAs in these TMDLs.

D. Nearshore monitoring (at stations located along the 30-foot depth contour) for bacterial contamination has been part of Hyperion's monitoring program for over 25 years and was included as an additional means to detect the approach of the plume to shore. In 1994, nearshore monitoring was replaced with similar "inshore" monitoring (at stations located approximately 1,000 feet offshore) to detect approach of the plume to the shore, but sites were located in kelp beds or near water contact recreation areas. Data collected at nearshore and inshore monitoring stations has shown ~~no~~ few exceedances of past or current Ocean Plan bacterial standards. ~~However,~~ ~~i~~Inshore monitoring sites have been retained to demonstrate ~~continued~~ compliance with Ocean Plan and Basin Plan bacterial standards during summer time. ~~as well as with the WLAs to implement those standards as contained in the Santa Monica Bay Beaches Bacteria TMDLs.~~

E. Offshore monitoring (at stations located offshore of the inshore/nearshore zone to a distance of three nautical miles from land) for bacterial contamination has been conducted as part of Hyperion's monitoring program. Offshore monitoring sites have been retained to demonstrate compliance with Ocean Plan and Basin Plan bacterial standards in the offshore.

F. Wastewater from Hyperion does not come into contact with the shoreline. In addition to bacterial contamination monitoring, the City of Los Angeles has collected and assessed considerable amounts of chemical and physical water quality data from Santa Monica Bay. The parameters collected in these assessments are used to locate and define the wastewater plume and include transmissivity, dissolved oxygen, temperature, salinity and ammonia. Since 1987, over six years of weekly water quality assessments and approximately four years of monthly and quarterly assessments have taken place under many oceanographic conditions, including El Nino, La Nina and winter storm conditions.

The movement of the plume is dictated by the depth of the thermocline or stratification and the direction and strength of highly variable Santa Monica Bay currents. Under typical conditions, the plume is detected within 2 km (6562 feet) of the outfall terminus, although it has been detected as far 8 km (26247 feet) away from the outfall. Also, the plume has almost always been detected below the thermocline at a depth ranging from 10 m (33 feet) to 55 m (180 feet). Infrequently, during winter storm conditions, the plume has been detected at the surface in the vicinity of the outfall. On rare occasions, it has been impossible to detect the plume.

As the waters of Santa Monica Bay approach the shore, the thermocline intersects the rising sea bottom. This point is typically 1000 m (3281 feet) or more offshore and is the theoretical limit of the approach of the plume to the shoreline. The plume has never been detected less than 2.5 km (8202 feet) from shore, at the 45 m (148 feet) depth contour. A thorough discussion of the fate and transport of Hyperion's wastewater plume is available in A. Dalkey and J. F. Shisko (1996) *Observations of Oceanic Processes and Water Quality following Seven Years of CTD Surveys in Santa Monica Bay, California*, Bulletin of the Southern California Academy of Sciences 95(1), pp. 17-32.

G. The following monitoring program requires analysis of receiving waters for three bacterial indicators: total coliform, enterococcus and fecal coliform. USEPA-approved methods for these indicators include membrane filtration, multiple tube fermentation and chromogenic/fluorogenic methods (for example, Colilert™18Medium [IDEXX] for total coliform and Enterolert™ [IDEXX] for enterococcus).

There is no comparable chromogenic/fluorogenic method for fecal coliform analysis. However, both the State of California Environmental Laboratory Accredation Program (ELAP) and the Microbiological Disease Laboratory accept the substitution of a method for quantifying *E. coli* as an indicator of fecal coliform (Colilert™18Medium (IDEXX), a chromogenic/fluorogenic method, can also be used to measure *E. coli*). *E. coli* is a subset of the fecal coliform group and is, therefore, a direct indicator of fecal contamination in water. Comparative testing, in parallel, must be performed by a laboratory substituting the *E. coli* method to determine if any adjustment to *E. coli* results is necessary to estimate fecal coliform. For example, Orange County Sanitation District multiplies *E. coli* results by ~~110%~~ a factor of 1.1 to estimate fecal coliform. Additionally, reports published by Southern California Coastal Water Research Project (SCCWRP) (including R. T. Noble, J.H. Dorsey, M.K. Leecaster, M. Mazur, C.D. McGee, D. Moore, V. Orozco-Borbon, D. Reid, K. Schiff, P.M. Vainik, S.B. Weisberg. 2000. *Southern California Bight 1998 Regional Monitoring Program: III. Storm event shoreline microbiology*, SCCWRP, Westminster, CA) generally show good correlation of traditional methods to these newer methods, but also indicate underestimation of fecal coliform when using *E. coli* as a direct substitute. Hyperion will need to calculate an appropriate multiplier using their own laboratory results and will require approval from the Executive Officer and USEPA before using the chromogenic/fluorogenic method (for example, Colilert™18Medium (IDEXX) method) for fecal coliform analyses.

H. NPDES compliance monitoring focuses on the effects of a specific point source discharge. Generally, it is not designed to assess impacts from other sources of pollution (e.g., nonpoint source runoff, aerial fallout) or to evaluate the current status of important ecological resources in the waterbody. The scale of existing compliance monitoring programs does not match the spatial and, to some extent, temporal boundaries of the important physical and biological processes in the ocean. In addition, the spatial coverage provided by compliance monitoring programs is less than ten percent of the nearshore ocean environment. Better technical information is needed about status and trends in ocean waters to guide management and regulatory decisions, to verify the effectiveness of existing programs, and to shape policy on marine environmental protection.

I. The Regional Board and USEPA, working with other groups, have developed a comprehensive basis for effluent and receiving water monitoring appropriate to large publicly owned treatment works (POTWs) discharging to waters of the Southern California Bight. This effort has culminated in the publication by the SCCWRP of the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California*. SCCWRP Tech. Rep #357. Southern

California Coastal Water Research Project, Westminster, CA. 101 pp.). This guidance provides the principles, framework and recommended design for effluent and receiving water monitoring elements which have guided development of the monitoring program described below.

J. In July 2000, the Santa Monica Bay Restoration Project (SMBRP) published "An Assessment of the Compliance Monitoring System in Santa Monica Bay" to set forth recommendations and priorities for compliance monitoring in Santa Monica Bay. This report reasoned that a reduced level of receiving water monitoring is justified for large POTWs discharging to Santa Monica Bay due to improvements in effluent quality and associated decreases in receiving water impacts. Like the Model Monitoring Plan developed by SCCWRP, SMBRP recommendations are focused on providing answers to management questions and allowing a reduction in POTW receiving water monitoring where discharge effects are well understood. The monitoring plan set forth here has been guided by SMBRP recommendations.

K. The conceptual framework for the Model Monitoring Program has three components that comprise a range of spatial and temporal scales: (1) core monitoring; (2) regional monitoring; and (3) special studies.

1. Core monitoring is local in nature and focused on monitoring trends in quality and effects of the point source discharge. This includes effluent monitoring as well as some aspects of receiving water monitoring. In the monitoring program described below these core components are typically referred to as local monitoring.

2. Regional monitoring is focused on questions that are best answered by a region-wide approach that incorporates coordinated survey design and sampling techniques. The major objective of regional monitoring is to collect information required to assess how safe it is to swim in the ocean, how safe it is to eat seafood from the ocean, and whether the marine ecosystem is being protected. Key components of regional monitoring include elements to address pollutant mass emission estimations, public health concerns, monitoring of trends in natural resources, assessment of regional impacts from all contaminant sources, and protection of beneficial uses. The final design of regional monitoring programs is developed by means of steering committees and technical committees comprised of participating agencies and organizations, and is not specified in this permit. Instead, for each regional component, the degree and nature of participation of the Discharger is specified. For this permit, these levels of effort are based upon past participation of the City of Los Angeles in regional monitoring programs.

   The Discharger shall participate in regional monitoring activities coordinated by the SCCWRP <u>or any other appropriate agency approved by the Regional Board and USEPA</u>. The procedures and time lines for the Regional Board and USEPA approval shall be the same as detailed for special studies, below.

3. Special studies are focused on refined questions regarding specific effects or development of monitoring techniques and are anticipated to be of short duration and/or small scale scale, although multiyear studies also may be needed. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes in the area of the discharge, or development of techniques for monitoring the same, arising out of the results of core or regional monitoring, may be pursued through special studies. These studies are by nature ad hoc and cannot be typically anticipated in advance of the five-year permit cycle.

   The ~~scope of each special study shall be determined by the~~ Discharger~~, in coordination with~~ the Regional Board and USEPA shall consult annually to determine the need for special studies. Each year, the Discharger shall submit proposals for *any proposed* special studies to the Regional Board and USEPA by ~~September~~ December 30, for the following year's monitoring effort (July through June). The following year, detailed scopes of work for proposals, including reporting schedules, shall be presented by the Discharger at a Spring Regional Board meeting, to obtain the Regional Board and USEPA approval and to inform the public. Upon approval by the Regional Board and USEPA, the Discharger shall implement its special study or studies.

L. The conceptual framework for the SMBRP Comprehensive Monitoring Program was designed to be implemented in part through modifications to existing receiving water monitoring programs for major NPDES dischargers into coastal ocean waters. Some elements of this monitoring program already have been implemented, for example through establishment of periodic bight-wide regional monitoring surveys (Southern California Bight Pilot Project'94, Bight'98 and Bight'03) and annual kelp bed monitoring. However, other elements of the program have yet to be developed, including:

   -rocky intertidal monitoring
   -resident fish monitoring
   -pelagic ecosystem monitoring
   -wetlands monitoring
   -hard bottom benthos monitoring
   -bird and mammal monitoring
   -commercial shellfish monitoring
   -stormwater mass emission loading and plume tracking monitoring.

~~The City of Los Angeles (Hyperion Treatment Plant) hereby is required to help establish and participate in the Santa Monica Bay Monitoring Consortium as a condition of this permit. The goal of this Monitoring Consortium will be to oversee development and implementation of the regional monitoring surveys required to complete the SMBRP Comprehensive Monitoring Program. The Monitoring Consortium shall be comprised of representatives from coastal and inland dischargers, as well as other interested parties. It is expected that each discharger will contribute only towards implementation of those monitoring~~

~~components that are applicable to their discharge. The goal is to implement these surveys by the summer of 2005.~~

~~The City of Los Angeles shall be responsible for developing a workplan, in conjunction with other consortium participants and interested stakeholders, outlining the monitoring surveys proposed to complete the SMBRP Comprehensive Monitoring Program. This workplan shall be submitted by March 31, 2005, for approval by the Executive Officer. The Monitoring Consortium also shall develop a funding mechanism to implement the recommended monitoring surveys. It is anticipated that funding will be supplied through financial contributions provided by NPDES dischargers. An effort will be made to offset these costs through reductions in existing monitoring requiremets, if possible.~~

The Santa Monica Bay Restoration Commission's Technical Advisory Committee has agreed to develop a detailed workplan outlining the monitoring surveys required to complete implementation of the Comprehensive Monitoring Program framework developed in 1993. This workplan should include formulation of management goals and objectives, identification of suitable monitoring indicators, detailed sampling designs, and cost estimates for each monitoring component. Upon completion of this workplan, USEPA and the Regional Board will develop an implementation plan to fund this program. It is anticipated that funding will be supplied through a combination of modifications, including redirection of existing effort and/or imposition of new requirements, to the Monitoring and Reporting Programs of the City of Los Angeles' Hyperion Treatment Plant and other NPDES dischargers into Santa Monica Bay and linkages to existing programs performed by other agencies or interested parties.

M. In attempt to bridge the foregoing gap in information, this monitoring program for Hyperion Treatment Plant is comprised of requirements to demonstrate compliance with the conditions of the NPDES permit, ensure compliance with State water quality standards, and mandate participation in regional monitoring and/or area-wide studies.

N. While there are additions in some program areas in the following receiving water monitoring program, implementation of the Model Monitoring Program will result overall in a decreased level of monitoring effort. This lower level of monitoring effort is justified at this time because of accumulation of knowledge from many years of monitoring by Southern California Bight dischargers, improved understanding of local oceanographic processes in general, and documented improvements in the areas of Santa Monica Bay that have been impacted by the Hyperion discharge. Additionally, changes in sampling designs address management questions more directly than in the past.

O. Major changes to the receiving water monitoring requirements have resulted from implementation of the 2001 California Ocean Plan's Water Quality Objectives and application of the monitoring principles and designs in the Model Monitoring Program for Large Ocean Discharges in Southern California, SCCWRP, March 2002, (Model Monitoring Program). These changes include:

1. Effluent toxicity – revised requirement for acute toxicity testing to evaluate discharge effect on marine species.

2. Bacteriological – shoreline stations transferred to the Municipal Stormwater Permit for Los Angeles County.

3. Sediment chemistry – reduction in types of chemical analysis.

4. Bioaccumulation ~~in fish~~ - reduction in frequency change from semiannual to annual; no replicates required, elimination of triannual collection of macroinvertebrate.

5. Fish communities – additional sampling stations, but no replicates required; sampling frequency reduced from quarterly to semiannual.

6. Benthic infauna – frequency reduced from semiannual to annual, replicates eliminated.

P. Discharger participation in regional monitoring programs is required as a condition of this permit. The Discharger shall complete collection and analysis of samples in accordance with the schedule established by the Steering Committee directing the Bight-wide regional monitoring surveys. The level of participation shall be similar to that provided by the Discharger in previous regional surveys conducted in 1994, 1998, 2000 and 2003. The regional programs which must be conducted under this permit include:

1. Future Southern California Bight regional surveys, including benthic infauna, sediment chemistry, fish communities, fish predator risk.

2. Santa Monica Bay Restoration Project's Seafood Safety Survey – the level of participation shall be similar to that provided for the 1998 Regional Bioaccumulation Survey.

3. Central Region Kelp Monitoring Program – coordinated by the Regional Board.

4. Central Bight Water Quality Cooperative Program – coordinated monitoring conducted by Orange County Sanitation District, County Sanitation Districts of Los Angeles County, City of Los Angeles and City of Oxnard through appropriate agencies for water quality monitoring.

Q. Regular regional monitoring for the Southern California Bight has been established, occurring at four- to five-year intervals, and coordinated through SCCWRP with discharger agencies and numerous other entities. The third regional monitoring program (Bight'03) occurred during summer 2003 and winter 2003-4. While participation in regional programs is required under this permit, revisions to the Hyperion monitoring program at the direction of the Regional Board and USEPA may be necessary to accomplish the goals of regional monitoring or to allow the performance of special studies to investigate regional or site-specific

water issues of concern. These revisions may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples to be collected. Such changes may be authorized by the Executive Officer and USEPA upon written notification to the Discharger.

R. The Regional Board has established the Central Region Kelp Survey Consortium to conduct regional kelp bed monitoring. This program is designed to require ocean dischargers in the Regional Board's jurisdiction to undertake a collaborative program (which may include participation by Orange County ocean dischargers) to monitor kelp beds in the Southern California Bight, patterned after the successful program implemented by the San Diego Regional Board since 1985. Data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to specific dischargers to be compared to regional trends. Additionally, this survey provides data to the Santa Monica Bay Restoration Project's Kelp Beds program.

The regional survey will consist primarily of quarterly aerial overflights to assess the size and health of existing kelp beds. The Discharger shall participate in the management and technical committees responsible for the final survey design and shall provide appropriate financial support to help fund the survey (share based on the number of participants in the study, but not to exceed a maximum of $10,000 per year). The regional kelp monitoring survey was initiated during 2003.

II. SUBMITTAL OF MONITORING REPORTS

A. Influent/effluent monitoring reports (Discharger Monitoring Reports) and receiving water bacterial monitoring reports shall be submitted monthly so that they are received by the Regional Board and USEPA by the 15th day of the second month following the end of each monthly reporting period. For example, the monitoring report covering the month of January 2005 shall be received by the Regional Board and USEPA by March 15, 2005. The reporting schedule is indicated in the following table.

Monitoring Frequency	Report Due
Continuous, Daily, Weekly, Monthly	By the 15th day of the second month
Quarterly	March 15 (1st Q), June 15 (2nd Q), September 15 (3rd Q), and December 15 (4th Q)
Semiannually	March 15 (1st) and September 15 (2nd)
Annually	September 15

B. By April 15 of each year, the Discharger shall submit an annual summary report containing a discussion of the previous year's influent/effluent analytical results, as well as graphical and tabular summaries of the monitoring analytical data. The data shall be submitted to the Regional Board and USEPA on hard copy and ~~on 3~~

~~1/2" computer diskette~~ a CD-Rom disk or other appropriate electronic medium. The submitted data must be IBM compatible, preferably using Microsoft Excel software. In addition, the Discharger shall discuss the compliance record and any corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge and permit requirements.

C. An annual summary of the receiving water monitoring data collected during each sampling year (January-December) shall be prepared and submitted so that it is received by the Regional Board and USEPA by August 1 of the following year.

A detailed receiving water monitoring biennial assessment report of the data collected during the two previous calendar sampling years (January-December) shall be prepared and submitted so that it is received by the Regional Board and USEPA by August 1 of every other year. This report shall include an annual data summary and shall also include an in-depth analysis of the biological and chemical data following recommendations in ~~"Design of 301(h) Monitoring Programs for Municipal Wastewater Discharges to Marine Water" (EPA, November 1982; 430/982-010; pages 74-91) and~~ the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California*. SCCWRP Tech. Rep #357. SCCWRP, Westminster, CA. 101 pp.). Data shall be tabulated, summarized, and graphed where appropriate, analyzed, interpreted, and generally presented in such a way as to facilitate ready understanding of its significance. Spatial and temporal trends shall be examined and compared. The relation of physical and chemical parameters to biological parameters shall be evaluated. See, also, Section IV.H. of this Monitoring and Reporting Program. All receiving water monitoring data shall be submitted in accordance with the data submittal formats developed for the Southern California Bight Regional Monitoring Surveys.

The first assessment report shall be due August 1, 2007, and cover the sampling periods of January-December 2005 and January-December 2006. Subsequent reports shall be due August 1, 2009, and August 1, 2011, to cover sampling periods of January 2007-December 2008 and January 2009-December 2010, respectively.

D. A summary report of the Outfall Inspection findings shall be provided annually. This written report, augmented with videographic and/or photographic images, shall provide a description of the observed external condition of the discharge pipes from shallow water to their respective termini. This report shall be submitted so that it is received by August 1 of the following year.

E. All monthly monitoring reports, annual summary reports, and biennial assessment reports shall be delivered to the Regional Board and USEPA as follows. Reference the reports to Compliance File No. CI-1492 to facilitate routing to the appropriate staff and file.

California Regional Water Quality Control Board
Los Angeles Region

320 West 4th Street, Suite 200
Los Angeles, CA 90013
Attention: Information Technology Unit

Regional Administrator
United States Environmental Protection Agency, Region IX
DMR/NPDES, MAILCODE: WTR-7
75 Hawthorne Street
San Francisco, CA 94105

F. Database Management System: The Regional Board and State Water Resources Control Board (State Board) are developing a database compliance monitoring management system. The Discharger may be required to submit all monitoring and annual summary reports electronically in a specified format when this system becomes fully operational.

III. MONITORING REQUIREMENTS

A. Quarterly influent and effluent analyses shall be performed during the months of January, April, July, and October. Semiannual influent and effluent analyses shall be performed during the months of January and July. Annual influent and effluent analyses shall be performed during the month of July. Should there be instances when monitoring could not be done during these specified months, the Discharger must notify the Regional Board and USEPA, state the reason why the monitoring could not be conducted, and obtain approval from the Executive Officer and USEPA for an alternate schedule. Results of quarterly, semiannual, and annual analyses shall be reported in the monthly monitoring report following the analysis.

B. Pollutants shall be analyzed using the analytical methods described in 40 CFR 136; or where no methods are specified for a given pollutant, by methods approved by the Regional Board, State Board and/or USEPA. The laboratory conducting analyses shall be certified by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Regional Board for that particular parameter. A copy of the laboratory certification shall be submitted with the annual summary report.

C. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR 136.3. All QA/QC analyses must be run on the same dates that samples are actually analyzed. The Discharger shall retain the QA/QC documentation in its files and make available for inspection and/or submit them when requested by the Regional Board and/or USEPA. Proper chain of custody procedures must be followed and a copy of this documentation shall be submitted with the monthly report.

D. For bacterial analyses, sample dilutions should be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or membrane filtration method, 2 to 16,000 per 100 ml for total and fecal coliform,

at a minimum, and 1 to 1000 per 100 ml for enterococcus). The detection methods used for each analysis shall be reported with the results of the analyses.

1. Detection methods used for coliforms (total and fecal) shall be those presented in Table 1A of 40 CFR 136 (revised May 14, 1999), unless alternate methods have been approved by USEPA pursuant to 40 CFR 136, or improved methods have been determined by the Executive Officer and/or USEPA.

2. Detection methods used for enterococcus shall be those presented in the USEPA publication EPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure* or any improved method determined by the Executive Officer and/or USEPA to be appropriate.

IV. REPORTING REQUIREMENTS

A. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL), and reported Minimum Level (RML) for each pollutant. The reported Minimum Level is the Minimum Level (ML) chosen by the Discharger for reporting and compliance determination from the Minimum Levels listed in Appendix II (Attachment T-1) of the 2001 Ocean Plan. MLs represent the lowest quantifiable concentration in a sample based on the proper application of method-specific analytical procedures and the absence of matrix interferences. MLs also represent the lowest standard concentration in the calibration curve for a specific analytical technique after the application of appropriate method-specific factors.

B. The Discharger shall select the analytical method that provides a ML lower than the permit limit established for a given parameter, or where there is no permit limit, the lowest effluent concentration value calculated in accordance with the procedures in the Ocean Plan. If the permit limit or the calculated lowest effluent concentration is lower than all the MLs in Attachment T-1, the Discharge must select the method with the lowest ML for compliance purposes. The Discharger shall include in the Annual Summary Report a list of the analytical methods employed for each test.

C. Non-detect levels reported for the Hyperion effluent are generally higher than permit limits and water quality objectives for DDT, chlordane, PCBs and PAHs. Therefore, in addition to Ocean Plan requirements specified in Monitoring and Reporting Program Sections III and IV of this permit, the Discharger shall strive for lower analytical detection levels to facilitate pollutant load quantification for future DDT, chlordane, PCBs and PAHs TMDLs.

D. The Discharger shall instruct its laboratories to establish calibration standards so that the ML (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. In accordance with section E, below, the Discharger's laboratory may employ a calibration standard lower than the ML in Attachment T-1.

E. For the purpose of reporting compliance with numerical influent, effluent and receiving water requirements, analytical data shall be reported using the following reporting protocols:

1. Sample results greater than or equal to the RML must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample); or

2. Sample results less than the RML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words "Estimated Concentration" (may be shortened to Est. Conc.); or

3. Sample results less than the laboratory's MDL must be reported as "Not-Detected", or ND.

F. Upon request by the Discharger, the Regional Board, in consultation with the State Board Quality Assurance Program and/or USEPA, may establish an ML that is not contained in Attachment T-1, to be included in the Discharger's permit, in any of the following situations:

1. When the pollutant under consideration is not included in Attachment T-1;

2. When the Discharger agrees to use a test method that is more sensitive than those specified in 40 CFR 136 (revised May 14, 1999, or subsequent revision);

3. When the Discharger agrees to use an ML lower than those listed in Attachment T-1;

4. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment T-1 and proposes an appropriate ML for their matrix; or

5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, and the Regional Board, State Board and USEPA, shall agree on a lowest quantifiable limit, and that limit will substitute for the ML for reporting and compliance determination purposes.

G. If the Discharger samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any influent, effluent, or receiving water constituent more frequently than required by this monitoring program using approved analytical methods, the results of those

analyses shall be reported. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.

H. Records and reports of marine monitoring surveys conducted to meet receiving water monitoring requirements shall include, at a minimum, the following information:

1. A description of climatic and receiving water characteristics at the time of sampling (weather observations, unusual or abnormal amounts of floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling or measurements, tidal stage and height, etc.).

2. The date, exact place and description of sampling stations, including differences unique to each station (e.g., date, time, station location, depth, ~~sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.), and observations relevant to the survey design~~ and sample type).

3. A list of the individuals participating in field collection of samples or data and description of the sample collection and preservation procedures used in the various surveys.

4. A description of the specific method used for laboratory analysis, the date(s) the analyses were performed and the individuals participating in these analyses.

5. An in-depth discussion of the results of the survey. All tabulations and computations shall be explained.

I. The Discharger shall inform the Regional Board and USEPA well in advance of any proposed construction or maintenance or modification to the treatment plant that could potentially affect compliance with applicable requirements.

J. The Discharger shall develop and maintain a record of all spills, overflows or bypasses of raw or partially treated sewage from its collection system or treatment plant. This record shall be made available to the Regional Board and USEPA upon request. On the fifteenth day of January, April, July, and October (15 days after the end of the fiscal quarter) of each year, the Discharger shall submit to the Regional Board and USEPA a report listing all spills, overflows or bypasses occurring during the previous quarter. The reports shall provide:

1. the date and time of each spill, overflow or bypass;
2. the location of each spill, overflow or bypass;
3. the estimated volume of each spill, overflow or bypass including gross volume, amount recovered and amount not recovered;
4. the cause of each spill, overflow or bypass;

5. whether each spill, overflow or bypass entered a receiving water and, if so, the name of the water body and whether it entered via storm drains or other man-made conveyances;
6. mitigation measures implemented; and
7. corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences.

K. For certain spills, overflows and bypasses, the Discharger shall make reports and conduct monitoring as required below:

1. For spills, overflows or bypasses of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer or has public exposure, and all spills, overflows and bypasses of 1,000 gallons or more, the Discharger shall report such spills to the Regional Board, the State Office of Emergency Services and the local health agency by telephone or electronically as soon as possible but not later than 24 hours of knowledge of the incident. The following information shall be included in the report: location; date and time of spill; volume and nature of the spill; cause(s) of the spill; mitigation measures implemented; and corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences.

2. For spills, overflows or bypasses that reach receiving waters, the Discharger shall obtain and analyze grab samples for total and fecal coliforms and enterococcus, upstream and downstream of the point of entry of the spill. This monitoring shall be on a daily basis from time the spill is known until the results of two consecutive sets of bacteriological monitoring indicate the return to the normal level or cessation of monitoring is authorized by the County Department of Health Services.

3. For spills, overflows or bypasses of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer or has public exposure, and all spills, overflows and bypasses of 1,000 gallons or more, the Discharger shall analyze a grab sample for total and fecal coliforms and enterococcus, and ~~limited~~ relevant pollutants of concern depending on the area and nature of spills or overflows.

4. The Regional Board notification shall be followed by a written report five working days after verbal notification. The written report shall document the information required in subparagraphs 1 and 3 above, monitoring results and any other information required in Provision E.3 of the Standard Provisions.

V. INFLUENT MONITORING

A. Influent monitoring is required to:

1. Determine compliance with NPDES permit conditions.

2. Assess treatment plant performance.
3. Assess effectiveness of the Pretreatment Program.

B. Sampling stations shall be established at each point of inflow to the sewage treatment plant and shall be located upstream of any in-plant return flows and where representative samples of the influent can be obtained. The date and time of sampling (as appropriate) shall be reported with the analytical values determined.

C. The following shall constitute the influent monitoring program.
(For footnotes, please see Pages T-23 to T-25)

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Flow	mgd	recorder/totalizer	continuous
BOD_5 20°C	mg/L	24-hr composite	daily
Suspended solids	mg/L	24-hr composite	daily
pH	pH units	grab	weekly
Oil and grease	mg/L	grab [3]	weekly
TOC	mg/L	24-hr composite	monthly

MISCELLANEOUS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Cyanide	µg/L	grab	monthly
Organic nitrogen	mg/L	24-hr composite	quarterly
Radioactivity [4] (Including gross alpha, gross beta, combined radium-226 & radium-228, tritium, strontium-90 and uranium)	pCi/L	24-hr composite	monthly
Total phosphorus (as P)	mg/L	24-hr composite	quarterly
Tributyltin	ng/L	24-hr composite	quarterly

PESTICIDES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Aldrin	µg/L	24-hr composite	quarterly
Chlordane and related compounds [5]	µg/L	24-hr composite	quarterly
DDT[6]	µg/L	24-hr composite	quarterly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Dieldrin	µg/L	24-hr composite	quarterly
Endosulfan [7]	µg/L	24-hr composite	quarterly
Endrin	µg/L	24-hr composite	quarterly
HCH [8]	µg/L	24-hr composite	quarterly
Heptachlor	µg/L	24-hr composite	quarterly
Heptachlor epoxide	µg/L	24-hr composite	quarterly
PCBs [9]	µg/L	24-hr composite	quarterly
Toxaphene	µg/L	24-hr composite	quarterly

ACID EXTRACTABLES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
2,4-Dinitrophenol	µg/L	24-hr composite	quarterly
2,4,6-Trichlorophenol	µg/L	24-hr composite	quarterly
4,6-Dinitro-2-methylphenol	µg/L	24-hr composite	quarterly
Phenolic compounds (chlorinated) [18]	µg/L	24-hr composite	quarterly
Phenolic compounds (non-chlorinated) [19]	µg/L	24-hr composite	quarterly

BASE NEUTRALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Bis(2-chloro-ethoxy) methane	µg/L	24-hr composite	quarterly
Bis(2-chloro-isopropyl) ether	µg/L	24-hr composite	quarterly
Di-n-butylphthalate	µg/L	24-hr composite	quarterly
Dichlorobenzenes [11]	µg/L	24-hr composite	quarterly
Diethylphthalate	µg/L	24-hr composite	quarterly
Dimethylphthalate	µg/L	24-hr composite	quarterly
Fluoranthene	µg/L	24-hr composite	quarterly
Hexachlorocyclopentadiene	µg/L	24-hr composite	quarterly
Isophorone	µg/L	24-hr composite	quarterly
Nitrobenzene	µg/L	24-hr composite	quarterly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Benzidine	ng/L	24-hr composite	quarterly
Bis(2-chloroethyl) ether	µg/L	24-hr composite	quarterly
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	quarterly
1,4-Dichlorobenzene	µg/L	24-hr composite	quarterly
3,3-Dichlorobenzidine	µg/L	24-hr composite	quarterly
2,4-Dinitrotoluene	µg/L	24-hr composite	quarterly
1,2-Diphenylhydrazine	µg/L	24-hr composite	quarterly
Hexachlorobenzene	µg/L	24-hr composite	quarterly
Hexachlorobutadiene	µg/L	24-hr composite	quarterly
Hexachloroethane	µg/L	24-hr composite	quarterly
N-Nitrosodimethylamine	µg/L	24-hr composite	quarterly
N-Nitrosodi-n-propylamine	µg/L	24-hr composite	quarterly
N-Nitrosodiphenylamine	µg/L	24-hr composite	quarterly
PAHs [12]	µg/L	24-hr composite	quarterly
TCDD equivalents [13]	pg/L	24-hr composite	quarterly

VOCs

Constituent	Units	Type of Sample [1, ~~18~~]	Minimum Frequency of Analysis [2]
Acrolein	µg/l	grab	quarterly
Acrylonitrile	µg/l	grab	quarterly
Benzene	µg/l	grab	quarterly
Carbon tetrachloride	µg/l	grab	quarterly
Chlorobenzene	µg/l	grab	quarterly
Chlorodibromomethane	µg/l	grab	quarterly
Chloroform	µg/L	grab	quarterly
Dichlorobromomethane	µg/l	grab	quarterly
Dichloromethane	µg/L	grab	quarterly
1,1-Dichloroethylene	µg/l	grab	quarterly
1,2-Dichloroethane	µg/L	grab	quarterly
1,3-Dichloropropene	µg/l	grab	quarterly

Constituent	Units	Type of Sample [1, ~~18~~]	Minimum Frequency of Analysis [2]
Ethylbenzene	µg/l	grab	quarterly
Halomethanes [14]	µg/L	grab	quarterly
Methyl-tert-butyl-ether	µg/l	grab	quarterly
Toluene	µg/l	grab	quarterly
1,1,2,2-Tetrachloroethane	µg/l	grab	quarterly
1,1,1-Trichloroethane	µg/l	grab	quarterly
1,1,2-Trichloroethane	µg/l	grab	quarterly
Tetrachloroethylene	µg/l	grab	quarterly
Trichloroethylene	µg/L	grab	quarterly
Vinyl chloride	µg/l	grab	quarterly

METALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Antimony	µg/L	24-hr composite	quarterly
Arsenic	µg/l	24-hr composite	monthly
Beryllium	µg/L	24-hr composite	quarterly
Cadmium	µg/l	24-hr composite	monthly
Chromium (III)	~~mg~~ µg/l	24-hr composite	monthly
Copper	µg/l	24-hr composite	monthly
Hexavalent chromium [15]	µg/l	24-hr composite	monthly
Lead	µg/l	24-hr composite	monthly
Mercury	µg/l	24-hr composite	monthly
Nickel	µg/l	24-hr composite	monthly
Selenium	µg/l	24-hr composite	monthly
Silver	µg/l	24-hr composite	monthly
Thallium	µg/l	24-hr composite	quarterly
Zinc	µg/l	24-hr composite	monthly

VI. EFFLUENT MONITORING

A. Effluent monitoring is required to:

1. Determine compliance with NPDES permit conditions and water quality standards.
2. Assess plant performance, identify operational problems and improve plant performance.
3. Provide information on wastewater characteristics and flows for use in interpreting water quality and biological data.

B. An effluent sampling station shall be located for each point of discharge and shall be located downstream of any in-plant return flows where representative samples of the effluent can be obtained. These stations shall be designated as Discharge Serial Nos. 001 and 002. The date and time of sampling (as appropriate) shall be reported with the analytical values determined (See Section IV, Reporting Requirements).

C. The following shall constitute the effluent monitoring program for Discharge Serial Nos. 001 and 002 (For footnotes, please see Pages T-23 to T-25).

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Flow	mgd	recorder/totalizer	continuous
BOD_5 20°C	mg/L	24-hr composite	daily
Suspended solids	mg/L	24-hr composite	daily
pH	pH units	grab	weekly
Oil and grease	mg/L	grab [3]	weekly
Temperature [17]	°C	~~grab~~ continuous	~~daily~~ continuous
TOC	mg/L	24-hr composite	monthly

MISCELLANEOUS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Settleable solids	ml/L	grab [3]	daily
Total chlorine residual	mg/L	grab	daily
Dissolved oxygen	mg/L	grab	weekly
Turbidity	NTU	24-hr composite	weekly
Ammonia nitrogen	mg/L	24-hr composite	monthly
Toxicity, acute	TUa	24-hr composite	monthly
Toxicity, chronic	TUc	24-hr composite	monthly
Cyanide	µg/L	grab	monthly
Nitrate nitrogen	µg/L	24-hr composite	quarterly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Organic nitrogen	mg/L	24-hr composite	quarterly
Radioactivity [4] (Including gross alpha, gross beta, combined radium-226 & radium-228, tritium, strontium-90 and uranium)	pCi/L	24-hr composite	monthly
Total phosphorus (as P)	mg/L	24-hr composite	quarterly
Tributyltin	ng/L	24-hr composite	quarterly

PESTICIDES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Aldrin	µg/L	24-hr composite	quarterly
Chlordane and related compounds [5]	µg/L	24-hr composite	quarterly
DDT [6]	µg/L	24-hr composite	quarterly
Dieldrin	µg/L	24-hr composite	quarterly
Endosulfan [7]	µg/L	24-hr composite	quarterly
Endrin	µg/L	24-hr composite	quarterly
HCH[8]	µg/L	24-hr composite	quarterly
Heptachlor	µg/L	24-hr composite	quarterly
Heptachlor epoxide	µg/L	24-hr composite	quarterly
PCBs [9]	µg/L	24-hr composite	quarterly
PCB congeners [10]	µg/L	24-hr composite	annually
Toxaphene	µg/L	24-hr composite	quarterly

ACID EXTRACTABLES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
2,4-Dinitrophenol	µg/L	24-hr composite	quarterly
2,4,6-Trichlorophenol	µg/L	24-hr composite	quarterly
4,6-Dinitro-2-methyl-phenol	µg/L	24-hr composite	quarterly
Phenolic compounds (chlorinated) [18]	µg/L	24-hr composite	quarterly
Phenolic compounds	µg/L	24-hr composite	quarterly

Constituent (non-chlorinated) [19]	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]

BASE NEUTRALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Bis(2-chloro-ethoxy) methane	µg/L	24-hr composite	quarterly
Bis(2-chloro-isopropyl) ether	µg/L	24-hr composite	quarterly
Di-n-butylphthalate	µg/L	24-hr composite	quarterly
Dichlorobenzenes [11]	µg/L	24-hr composite	quarterly
Diethylphthalate	µg/L	24-hr composite	quarterly
Dimethylphthalate	µg/L	24-hr composite	quarterly
Fluoranthene	µg/L	24-hr composite	quarterly
Hexachlorocyclopentadiene	µg/L	24-hr composite	quarterly
Isophorone	µg/L	24-hr composite	quarterly
Nitrobenzene	µg/L	24-hr composite	quarterly
Benzidine	µg/L	24-hr composite	quarterly
Bis(2-chloroethyl) ether	µg/L	24-hr composite	quarterly
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	quarterly
1,4-Dichlorobenzene	µg/L	24-hr composite	quarterly
3,3-Dichlorobenzidine	µg/L	24-hr composite	quarterly
2,4-Dinitrotoluene	µg/L	24-hr composite	quarterly
1,2-Diphenylhydrazine	µg/L	24-hr composite	quarterly
Hexachlorobenzene	µg/L	24-hr composite	quarterly
Hexachlorobutadiene	µg/L	24-hr composite	quarterly
Hexachloroethane	µg/L	24-hr composite	quarterly
N-Nitrosodimethylamine	µg/L	24-hr composite	quarterly
N-Nitrosodi-n-propylamine	µg/L	24-hr composite	quarterly
N-Nitrosodiphenylamine	µg/L	24-hr composite	quarterly
PAHs [12]	µg/L	24-hr composite	quarterly
TCDD equivalents [13]	pg/L	24-hr composite	quarterly

VOCs

Constituent	Units	Type of Sample [1, ~~18~~]	Minimum Frequency of Analysis [2, 16]
Acrolein	µg/L	grab	quarterly
Acrylonitrile	µg/L	grab	quarterly
Benzene	µg/L	grab	quarterly
Carbon tetrachloride	µg/L	grab	quarterly
Chlorobenzene	µg/L	grab	quarterly
Chlorodibromomethane	µg/l	grab	quarterly
Chloroform	µg/L	grab	quarterly
Dichlorobromomethane	µg/l	grab	quarterly
Dichloromethane	µg/L	grab	quarterly
1,1-Dichloroethylene	µg/L	grab	quarterly
1,2-Dichloroethane	µg/L	grab	quarterly
1,3-Dichloropropene	µg/L	grab	quarterly
Ethylbenzene	µg/L	grab	quarterly
Halomethanes [14]	µg/L	grab	quarterly
Methyl-tert-butyl-ether	µg/l	grab	quarterly
Toluene	µg/L	grab	quarterly
1,1,2,2-Tetrachloroethane	µg/L	grab	quarterly
1,1,1-Trichloroethane	µg/L	grab	quarterly
1,1,2-Trichloroethane	µg/L	grab	quarterly
Tetrachloroethylene	µg/L	grab	quarterly
Trichloroethylene	µg/L	grab	quarterly
Vinyl chloride	µg/L	grab	quarterly

METALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Antimony	µg/L	24-hr composite	quarterly
Arsenic	µg/l	24-hr composite	monthly
Beryllium	µg/L	24-hr composite	quarterly
Cadmium	µg/L	24-hr composite	monthly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Chromium (III)	µg/L	24-hr composite	monthly
Copper	µg/L	24-hr composite	monthly
Hexavalent chromium [15]	µg/L	24-hr composite	monthly
Lead	µg/L	24-hr composite	monthly
Mercury	µg/L	24-hr composite	monthly
Nickel	µg/L	24-hr composite	monthly
Selenium	µg/L	24-hr composite	monthly
Silver	µg/L	24-hr composite	monthly
Thallium	µg/L	24-hr composite	quarterly
Zinc	µg/L	24-hr composite	monthly

Whenever there is a discharge from Discharge Serial No. 001 (not during routine maintenance activities), the discharger shall monitor total chlorine residual at a frequency of daily or once per discharge, which one is greater, in addition to the constituents listed above.

Footnotes for Influent and Effluent Monitoring Program

[1] For 24-hour composite samples, if the duration of the discharge is less than 24 hours but greater than 8 hours, at least eight flow-weighted samples shall be obtained during the discharge period and composited. For discharge durations of less than eight hours, individual "grab samples" may be substituted. A grab sample is an individual sample collected in less than 15 minutes.

[2] For the influent and Discharge Serial No. 002, weekly, and monthly sampling shall be arranged so that each day of the week is represented over a seven week or month period. The schedule should be repeated every seven weeks or months.

[3] Single grab sample at peak flow.

[4] Analyze these radiochemicals by the following USEPA methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium.

Analysis for combined Radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If Radium-226 & 228 exceeds the stipulated criteria, analyze for Tritium, Strontium-90 and uranium.

[5] Sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, ~~nonachlor-alpha~~, nonachlor-cis, ~~nonachlor-gamma~~ nonachlor-trans and oxychlordane.

[6] Sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[7] Sum of endosulfan-alpha and –beta and endosulfan sulfate.

[8] Sum of alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

[9] Sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

[10] To facilitate interpretation of sediment/fish tissue data and TMDL development, PCB congeners whose analytical characteristics resemble those of PCB-18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206 shall be individually quantified.

[11] Sum of 1,2- and 1,3-dichlorobenzene.

[12] Sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

[13] Sum of the concentration of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below:

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8-tetra CDF	0.1
1,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
2,3,7,8-hexa CDFs	0.1
2,3,7,8-hepta CDFs	0.01
octa CDF	0.001

[14] Sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[15] Discharger may, at its option, meet the hexavalent chromium limitation by analyzing for total chromium rather than hexavalent chromium.

[16] For Discharge Serial Nos. 001, the minimum frequency of analysis shall be once per discharge day, but no more than one analysis need be done during the period indicated. The permit does not require acute toxicity testing of this effluent discharge. During routine maintenance activities, sampling and analyses are not required.

[17] For Discharge Serial No. 002, sampling shall be continuous and the maximum daily temperature shall be reported.

[18] ~~Volatile priority pollutant monitoring in the influent and effluent shall consist of three grab samples taken over a 24-hour period at approximately equal intervals. One sample shall be taken during peak flow. Each sample shall be preserved separately and combined with the other samples in proportion to flow to produce a single composite sample for analysis.~~

Sum of 2-Chlorophenol, 2,4-Dichlorophenol, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, and Pentachlorophenol.

[19] Sum of Phenol, 2,4-Dimethylphenol, 2-Nitrophenol, and 4-Nitrophenol, 2,4-Dinitrophenol and 4,6-Dinitro-2-Methylphenol.

D. The following Mass Emission Benchmarks, in metric tons per year (MT/yr), have been established for the discharge through the 5-mile outfall (Discharge Serial No. 002). The Discharger shall monitor and report the mass emission rate for all constituents that have mass emission benchmarks. For each constituent, the 12-month average mass emission rate and the concentration and flow used to calculate that mass emission rate shall be reported in the annual pretreatment report and the annual receiving water monitoring report.

Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
Marine Aquatic Life	
Arsenic	1.9
Cadmium	0.88
Chromium VI	4.6
Chromium (total)	n/a
Copper	13
Lead	2.1
Mercury	0.19
Nickel	8.3
Selenium	0.94
Silver	1.2
Zinc	22
Cyanide	4.6
Total chlorine residual	n/a
Ammonia as N	20,100
Acute toxicity	N/a
Chronic toxicity	N/a
Phenolic compounds (non-chlorinated)	3
Phenolic compounds (chlorinated)	0.5
Endosulfan	0.004
Endrin	0.004
HCH	0.02
Radioactivity	n/a
Human Health (noncarcinogens)	

Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
Acrolein	1
Antimony	3
Bis(2-cl-ethoxy) methane	0.03
Bis(2-cl-isopropyl) ether	0.03
Chlorobenzene	0.066
Chromium (III)	3.6
Di-n-butyl phthalate	2.2
Dichlorobenzenes (BNA)	1
Diethyl phthalate	0.03
Dimethyl phthalate	0.15
2-methyl-4,6-dinitrophenol	0.2
2,4-dinitrophenol	0.12
Ethyl benzene	0.066
Fluoranthene	0.03
Hexachlorocyclopentadiene	1.6
Nitrobenzene	0.03
Thallium	4.3
Toluene	0.25
Tributyltin	n/a
1,1,1-trichloroethane	0.099
Human Health Protection (carcinogens)	
Acrylonitrile	0.17
Aldrin	n/a
Benzene	0.12
Benzidine	n/a
Beryllium	0.006
Bis(2-chloroethyl) ether	0.05
Bis(2-ethylhexyl) phthalate	3.8
Carbon tetrachloride	0.083
Chlordane	n/a
Chlorodibromomethane	2.2
Chloroform	3.6
DDT, total	n/a
1,4-dichlorobenzene (BNA)	7.7
3,3'-dichlorobenzidine	n/a

Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
1,2-dichloroethane	0.03
1,1-dichloroethylene	0.072
Dichlorobromomethane	0.83
Methylene chloride	12
1,3-dichloropropene	0.17
Dieldrin	n/a
2,4-dinitrotoluene	0.04
1,2-diphenylhydrazine	0.03
Halomethanes	1.2
Heptachlor	n/a
Heptachlor epoxide	n/a
Hexachlorobenzene	n/a
Hexachlorobutadiene	0.04
Hexachloroethane	0.04
Isophorone	3.2
N-nitrosodimethylamine	0.094
N-nitrosodi-n-propylamine	0.072
N-nitrosodiphenylamine	0.05
PAHs	n/a
PCBs	n/a
TCDD equivalents	n/a
1,1,2,2-tetrachloroethane	0.1
Tetrachloroethene	3.2
Toxaphene	n/a
Trichloroethene	0.094
1,1,2-trichloroethane	0.094
2,4,6-trichlorophenol	0.05
Vinyl chloride	0.094

E. Toxicity Monitoring Requirements

1. Acute Toxicity Testing

a. **Methods and test species**. Test Species and Methods for Discharge Serial No. 002. The discharger shall conduct 96-hour static renewal acute toxicity tests on flow-weighted 24-hour composite effluent samples. When conducting toxicity tests in

accordance with a specified chronic test methods manual, if daily observations of mortality make it possible to also calculate acute toxicity for the desired exposure period and the dilution series for the toxicity test includes the acute IWC, such method may be used to estimate the 96-hour LC50.

The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002), with preference for west coast vertebrate and invertebrate species. ~~or *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA 821-R-02-014, 2002) using Mysidopsis bahia (mysid); and *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995) using Atherinops affinis (topsmelt). If Atherinops affinis in the West Coast chronic test methods manual is not available, the presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002), or *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA 821-R-02-014, 2002) using Menidia beryllina (silversides).~~

~~Test Species and Methods for Discharge Serial No. 001. The discharger shall conduct 96-hour static renewal acute toxicity tests on flow-weighted 24-hour composite effluent samples. The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002) using a freshwater vertebrate species and a freshwater invertebrate species.~~

b. **Frequency**

(1) Screening - The Discharger shall conduct the first acute toxicity test screening ~~every 24 months~~ for three consecutive months~~, with the first screening under this Monitoring Program to be conducted~~ in 2005 ~~2004~~. Re-screening is required every 24 months. The Discharger shall re-screen with a marine vertebrate species and a marine invertebrate species and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrate that the same species is the most sensitive, then the re-screening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger

shall proceed with suites of screening tests for a minimum of three, but not to exceed five, suites. ~~Re-screening shall be conducted at a different time of year from the previous screening. Screening tests shall be conducted using a marine vertebrate species and a marine invertebrate species.~~

(2) Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive marine species.

c. **Toxicity Units ~~for Discharge Serial No. 002~~.** The acute toxicity of the effluent shall be expressed and reported in Acute Toxic Units, TUa, where,

$$TU_a = \frac{100}{LC50}$$

The Lethal Concentration, 50 Percent (LC50) is expressed as the estimate of the percent effluent concentration that causes death in 50% of the test population, in the time period prescribed by the toxicity test.

~~**Toxicity Reporting for Discharge Serial No. 001.** The acute toxicity of the effluent shall be expressed and reported as "Pass" or "Fail", where the presence of acute toxicity is defined as significantly reduced survival in 100% effluent compared to the control and determined using the hypothesis testing procedures outlined in flowchart Figure 12 of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002).~~

2. Chronic Toxicity Testing

a. **Methods and test species**. The Discharger shall conduct critical life stage chronic toxicity tests on 24-hour composite effluent samples in accordance with USEPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, 1995, (EPA/600/R-95/136). When a chronic toxicity test method that incorporates a 96-hour acute toxicity endpoint is used to monitor toxicity at the chronic IWC in effluent discharged from Outfall 001, the 96-hour acute toxicity statistical endpoint shall also be reported as LC50 and Tua, along with other chronic toxicity test results required by this permit.

b. **Frequency**

(1) Screening - The Discharger shall conduct the first chronic toxicity test screening ~~every 24 months~~ for three consecutive months~~, with the first screening under this Monitoring Program to be conducted~~ in 2005. Re-screening is required every 24 months. The Discharger shall re-screen with a marine vertebrate species, a marine invertebrate species, and a marine alga species and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrate that the same species is the most sensitive, then the re-screening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five, suites. ~~Re-screening shall be conducted at a different time of year from the previous screening. Screening tests shall be conducted using a vertebrate, an invertebrate, and a plant.~~

(2) Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive species.

c. **Toxicity Units.** The chronic toxicity of the effluent shall be expressed and reported in Chronic Toxic Units, TUc, where,

$$TU_c = \frac{100}{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on test organisms, as determined by the results of a critical life stage toxicity test.

3. Quality Assurance

a. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).

b. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manual (EPA-821-R-02-012 and/or EPA/600/R-95/136), then the Discharger must re-sample and re-test within 14 days.

c. Control and dilution water should be receiving water or laboratory water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.

d. A series of at least five dilutions and a control shall be tested. The dilution series shall include the instream waste concentration (IWC), and two dilutions above and two below the IWC. The acute IWC for Discharge Serial No. 002 is 35% effluent. ~~the acute IWC for Discharge Serial No. 001 is 100% effluent.~~ The chronic IWC for Discharge Serial No. 002 is 1.2% effluent; the chronic IWC for Discharge Serial No. 001 is 7.0% effluent.

e. When using 2002 WET test methods, ~~The~~ the effluent and reference toxicant tests ~~for chronic toxicity~~ must meet the upper and lower bounds on test sensitivity, as determined by calculating the Percent Minimum Significant Difference (PMSD) for each test result. Test sensitivity bounds are specified for these tests ~~methods EPA/600/R-95/136~~ in Table 3-6 of *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program* (EPA/833-R-00-003, June 2000). There are five possible outcomes based on the PMSD result:

(1) Unqualified Pass: The test's PMSD is within the bounds in Table 3-6 and there is no significant difference between the means for the control and the IWC treatment. The regulatory authority would conclude that there is no toxicity at the IWC concentration.

(2) Unqualified Fail: The test's PMSD is larger than the lower bound (but not greater than the upper bound) in Table 3-6 and there is a significant difference between the means for the control and the IWC treatment. The regulatory authority would conclude that there is toxicity at the IWC concentration.

(3) Lack Test Sensitivity: The test's PMSD exceeds the upper bound in Table 3-6 and there is no significant difference between the means for the control and the IWC treatment. The test is considered invalid. An effluent sample must be collected and another toxicity test must be conducted. The Discharger must re-sample and re-test within 14 days.

(4) Lack Test Sensitivity: The test's PMSD exceeds the upper bound in Table 3-6 and there is a significant difference between the means for the control and the IWC treatment. The test is considered valid. The regulatory authority would conclude that there is toxicity at the IWC concentration.

(5) Very Small by Significant Difference: The relative difference (see Section 6.4.2 of EPA/833-R-00-003)

between the means for the control and the IWC treatment is smaller than the lower bound in Table 3-6 and this difference is statistically significant. The test is acceptable. The NOEC is determined as described in Sections 6.4.2 and 6.4.3 of EPA/833-R-00-003.

4. Accelerated Monitoring

If the effluent toxicity test result exceeds the limitation, then the Discharger shall immediately implement accelerated toxicity testing that consists of six additional tests, approximately every two weeks, over a 12-week period. Effluent sampling for the first test of the six additional tests shall commence within 3 days of receipt of the test results exceeding the toxicity limitation.

a. If all the results of the six additional tests are in compliance with the toxicity limitation, the Discharger may resume regular monthly testing.

b. If the result of any of the six additional tests exceeds the limitation, then the Discharger shall continue to monitor once every two weeks until six consecutive biweekly tests are in compliance. At that time, the Discharger may resume regular monthly testing.

c. If the results of any two of the six tests (any two tests in a 12-week period) exceed the limitation, the Discharger shall initiate a Toxicity Reduction Evaluation (TRE).

d. If implementation of the initial investigation TRE workplan (see item 5) indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger shall return to the regular testing frequency.

5. Preparation of an Initial Investigation TRE Workplan

The Discharger shall prepare and submit a copy of the Discharger's initial investigation Toxicity Reduction Evaluation (TRE) workplan to the Executive Officer of the Regional Board for approval and USEPA within 90 days of the effective date of this permit. If the Executive Officer does not disapprove the workplan within 60 days, the workplan shall become effective. The Discharger shall use USEPA manual EPA/833B-99/002 (municipal) as guidance, or most current version. At a minimum, the TRE Workplan must contain the provisions in Attachment C. This workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include, at a minimum:

a. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

b. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the facility; and,

c. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor). See MRP Section VI.E.6.c. for guidance manuals.

6. Steps in Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE)

a. If results of the implementation of the facility's initial investigation TRE workplan indicate the need to continue the TRE/TIE, the Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer and USEPA within 15 days of completion of the initial investigation TRE. The detailed workplan shall include, but not be limited to:

(1) Further actions to investigate and identify the cause of toxicity;

(2) Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

b. The following section summarizes the stepwise approach used in conducting the TRE:

(1) Step 1 includes basic data collection.

(2) Step 2 evaluates optimization of the treatment system operation, facility housekeeping, and selection and use of in-plant process chemicals.

(3) If Steps 1 and 2 are unsuccessful, Step 3 implements a Toxicity Identification Evaluation (TIE) and employment of all reasonable efforts using currently available TIE methodologies. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity.

(4) Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options.

(5) Step 5 evaluates in-plant treatment options.

(6) Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of compliance with those requirements may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there are no longer toxicity violations.

c. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the USEPA acute manual, chronic manual, EPA/600/R-96-054 (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III), as guidance.

d. If a TRE/TIE is initiated prior to completion of the accelerated testing required in Section VI.E.4. of this program, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer and USEPA.

e. The Regional Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based, in part, on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

7. Ammonia Removal

a. Except with prior approval from the Executive Officer of the Regional Board and USEPA ammonia shall not be removed from bioassay samples. The Discharger must demonstrate the effluent toxicity is caused by ammonia *because of increasing test pH* when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate that the toxicity is caused by ammonia and not other toxicants before the Executive Officer and USEPA would allow for control of pH in the test.

(1) There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.

(2) Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.

(3) Conduct graduated pH tests as specified in the toxicity identification evaluation methods. For example, mortality should be higher at pH 8 and lower at pH 6.

(4) Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

b. When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures which do not significantly alter the nature of the effluent, after submitting a written request to the Regional Board and USEPA, and receiving written permission expressing approval from the Executive Officer of the Regional Board and USEPA.

8. Reporting

The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month, as required by this permit. Test results shall be reported in Acute Toxicity Units (TUa) or Chronic Toxicity Units (TUc), as required, with the discharge monitoring report (DMR) for the month in which the test is conducted.

If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to Section VI.E.4.d, then those results also shall be submitted with the DMR for the period in which the Investigation occurred.

a. The full report shall be ~~submitted~~ received by the Regional Board and USEPA by the 15th day of the second month following sampling ~~by the end of the month in which the DMR is submitted~~.

b. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the toxicity limit.

c. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test, as appropriate:

(1) sample date(s)

(2) test initiation date

(3) test species

(4) end point values for each dilution (e.g. number of young, growth rate, percent survival)

(5) LC_{50} value(s) in percent effluent

(6) TUa value(s) $\left(TU_a = \frac{100}{LC50} \right)$

(7) NOEC value(s) in percent effluent

(8) TUc values $\left(TU_c = \frac{100}{NOEC} \right)$

(9) Mean percent mortality (+standard deviation) after 96 hours in 100% effluent (if applicable)

(10) IC/EC_{25} values(s) in percent effluent

Inhibition Concentration (IC_P) is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological endpoint (e.g., reproduction, growth) calculated from a continuous model (e.g., EPA Interpolation Model).

Effective Concentration (EC_P) is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a quantal biological measurement (e.g., development, survival) calculated from a continuous model (e.g., Probit).

(11) NOEC and LOEC (Lowest Observable Effect Concentration) values for reference toxicant test(s)

(12) Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).

d. The Discharger shall provide a compliance summary which includes a summary table of toxicity data from at least eleven of the most recent samples.

e. The Discharger shall notify this Regional Board and USEPA immediately of any toxicity exceedance and in writing 14 days after the receipt of the results of an effluent limit. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status

report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

VII. RECEIVING WATER MONITORING PROGRAM

(For footnotes, please see Pages T-50 to T-51)

A. Inshore Water Quality Monitoring

1. This survey addresses the compliance question~~s~~: "Are Ocean Plan and Basin Plan limits for bacteria being met?" ~~and "Are WLAs in the Santa Monica Bay Beaches Bacteria TMDLs being met?"~~ Data collected provide the information necessary to demonstrate compliance with the ~~WLAs in the Santa Monica Bay Beaches Bacteria TMDLs and underlying~~ water quality standards. Parameters to be monitored include:

Parameter	Units	Type of Sample	Sample Frequency
Fecal coliform (or *E. coli*)	CFU/100 ml (or MPN/100 ml)	discrete sampling at the surface and at midwater	Annually[1] (summer) ~~5 times/month[1]~~
Total coliform	CFU/100 ml (or MPN/100 ml)	discrete sampling at the surface and at midwater	Annually[1] (summer) ~~5 times/month[1]~~
Enterococcus	CFU/100 ml (or MPN/100 ml)	discrete sampling at the surface and at midwater	Annually[1] (summer) ~~5 times/month[1]~~

Hyperion shall calculate an appropriate multiplier for substituting *E. coli* for fecal coliform using bacterial data from their own laboratory which will require approval from the Executive Officer and USEPA before using the Colilert™18Medium (IDEXX) method for *E. coli*.

2. Inshore Water Quality Monitoring Stations

Eleven inshore water quality sampling stations shall be sampled at a distance of 1000 feet from the shoreline or at the 30-foot depth contour, whichever is further from shore (except that station IS-11 is located at King Harbor in Redondo Beach). The stations shall be designated and located as follows:

Station	Latitude*	Longitude*
~~I-1~~ IS-01	33 59.833	118 ~~48.017~~ 48.067
~~I-2~~ IS-02	34 00.950	118 46.967
~~I-3~~ IS-03	34 01.717	118 44.117

Station	Latitude*		Longitude*	
~~I-4~~ IS-04	34 01.833		118 40.383	
~~I-5~~ IS-05	34 02.050		118 34.833	
~~I-6~~ IS-06	34 ~~00.150~~	00.201	118 ~~29.700~~	29.923
~~I-7~~ IS-07	33 58.550		118 28.317	
~~I-8~~ IS-08	33 57.567		118 ~~27.683~~	27.583
~~I-9~~ IS-09	33 56.900		118 27.133	
~~I-10~~ IS-10	33 56.283		118 26.817	
~~I-11~~ IS-11	33 ~~50.833~~	50.000	118 23.850	

* Given in decimal ~~degrees~~ minutes

B. Offshore Water Quality Monitoring

1. This survey addresses the compliance questions: "Are Ocean Plan and Basin Plan objectivess for dissolved oxygen, pH and bacteria being met?" Data collected provide the information necessary to demonstrate compliance with the standards for local monitoring. In addition, data collected by the City of Los Angeles contribute to the Central Bight Cooperative Water Quality Survey. This regionally coordinated survey provides integrated water quality surveys on a quarterly basis. These surveys cover 200 kilometers of coast in Ventura, Los Angeles, and Orange County, from the nearshore to approximately 10 kilometers offshore. This cooperative program contributes to a regional understanding of seasonal patterns in nearshore water column structure. The regional view provides context for determining the significance and causes of locally observed patterns in the area of wastewater outfalls.

2. Sampling Design – Fifty-four offshore water quality stations shall be sampled quarterly by a CTD profiler (see Figure 1). Sampling techniques will follow protocols described in the most recent Bight Regional Marine Monitoring Survey ~~Bight'98~~ Field Operations Manual ~~(Southern California Bight 1998 Regional Marine Monitoring Survey Field Operations Manual, Bight'98 Steering Committee, July 1998)~~.

~~Concurrent with the CTD profiling survey, discrete samples[2] of each of the following parameters shall be collected quarterly at all stations: ammonia, fecal coliform (or *E. coli*), total coliform and enterococcus.~~

~~The Central Bight Cooperative Water Quality Survey stations also include 21 offshore discrete sampling stations at fixed depths of 0, 15, 30, and 45 meters as noted in next section - Water Quality Survey Sites. Parameters to be monitored include:~~

Concurrent with the CTD profiling survey, discrete samples[2] shall be collected quarterly at all 21 offshore discrete sampling stations for ammonia and fecal coliform (or E. coli), total coliform and enterococcus at fixed depths of 1, 15, 30, and 45 meters (or as deep as practical for

those stations located in depths less than 45 m) as noted in the next section - Water Quality Survey Sites. Parameters to be monitored include:

Parameter	Units	Type of Sample	Sample Frequency
Dissolved oxygen	mg/L	continuous profile[3]	quarterly
Temperature	°C	continuous profile[3]	quarterly
Salinity	psu	continuous profile[3]	quarterly
Transmissivity	% transmission	continuous profile[3] or Beam C	quarterly
Chlorophyll	µg/L	continuous profile[3]	quarterly
pH	pH units	continuous profile[3]	quarterly
Ammonia	µg/L	discrete sampling at specified depths [2]	quarterly
Fecal coliform (or *E. coli)*	CFU/100ml (or MPN/100 ml)	discrete sampling at specified depths [2]	quarterly
Total Coliform	CFU/100ml (or MPN/100 ml)	discrete sampling at specified depths [2]	quarterly
Enterococcus	CFU/100 ml (or MPN/100 ml)	discrete sampling at specified depths [2]	quarterly
Visual observations[4]	---	---	quarterly

The following additional offshore sampling shall be conducted at Station A-2 (see Survey Sites - Benthic and Trawl Stations table in Benthic Sediments Monitoring section below and Figure 2) and two additional stations within approximately 50 feet of the discharge point whenever there is any discharge to the 1-mile outfall (Discharge Serial No. 001):

Parameter	Units	Type of Sample	Sample Frequency
Total chlorine residual	µg/L	grab [5]	once per discharge day
Fecal coliform (or *E. coli*)	CFU/100 ml (or MPN/100 ml)	surface & bottom grab [6]	once per discharge day
Total coliform	CFU/100 ml (or MPN/100 ml)	surface & bottom grab [6]	once per discharge day
Enterococcus	CFU/100 ml	surface & bottom grab [6]	once per discharge day

3. Offshore Water Quality Survey Sites

Station	Latitude*		Longitude*		Station	Latitude*		Longitude*	
3201	33	51.250	118	24.367	3604**	33	56.416	118	30.586
3202	33	50.917	118	25.067	3605**	33	55.666	118	32.133
3203	33	50.717	118	25.583	3606**	33	55.000	118	33.500
3204**	33	50.217	118	26.433	3701	33	59.166	118	29.166
3205**	33	49.433	118	27.817	3702	33	58.800	118	30.000
3206	33	48.666	118	29.567	3703	33	58.450	118	30.600
3301	33	53.583	118	25.633	3704**	33	58.000	118	31.533
3302	33	53.350	118	26.183	3705**	33	57.216	118	33.216
3303	33	53.133	118	26.800	3706**	33	56.550	118	34.500
3304**	33	52.767	118	27.417	3801	34	2.000	118	35.000
3305**	33	52.100	118	29.600	3802	34	1.550	118	35.250
3306**	33	51.067	118	31.633	3803	34	0.350	118	35.833
3401	33	54.150	118	25.950	3804**	33	59.600	118	36.250
3402	33	54.000	118	26.833	3805**	33	58.333	118	36.850
3403	33	54.066	118	27.600	3806	33	57.366	118	37.416
3404**	33	53.816	118	28.116	3901	34	1.650	118	43.000
3405**	33	53.233	118	30.383	3902	34	1.166	118	43.000
3406**	33	52.750	118	32.133	3903	34	0.666	118	43.000
3501	33	55.883	118	26.883	3904**	33	59.850	118	43.000
3502	33	55.666	118	27.616	3905	33	57.616	118	43.000
3503	33	55.433	118	28.350	3906	33	56.566	118	43.000
3504**	33	55.000	118	29.650	4001	33	59.716	118	48.316
3505**	33	54.550	118	31.516	4002	33	59.300	118	48.316
3506**	33	54.000	118	32.983	4003**	33	58.833	118	48.316
3601	33	57.584	118	27.975	4004	33	57.500	118	48.316
3602	33	57.333	118	28.666	4005	33	55.683	118	48.316
3603	33	56.966	118	29.416	4006	33	54.750	118	48.316

* Given in decimal degrees
** Discrete stations of the Central Bight Cooperative Water Quality Survey

C. Benthic Sediments Monitoring

1. Local Benthic Trends Survey

a. This survey addresses the question: “Are benthic conditions under the influence of the discharge changing over time?” The data collected are used for regular assessment of trends in sediment contamination and biological response along a fixed grid of sites within the influence of the discharge.

b. Sampling Design - Forty-four~~six~~ offshore sampling stations (~~26~~ 24 fixed stations plus one set of 20 random stations) within Santa Monica Bay shall be sampled annually for benthic monitoring. Random station sets A and B will be sampled in alternate years. The benthic stations shall be sampled in ~~July/August~~ summer (July - September) for sediments following protocols described in the most recent Bight Regional Marine Monitoring Survey ~~Bight'98~~

Field Operations Manual. One sample shall be taken at each station for benthic infauna for community analyses[7] by means of a 0.1 m^2 (1.1 ft^2) modified Van Veen sediment grab sampler.

The following determinations shall be made at each station, where appropriate: identification of all organisms to lowest possible taxon; community structure analysis [7]; mean, range, standard deviation, and 95% confidence limits, if appropriate, for value determined in the community analysis. The discharger may be required to conduct additional "statistical analyses" to determine temporal and spatial trends in the marine environment.

In addition, ~~O~~one sample shall be taken at each station for chemistry analysis and analyzed for TOC and Grain Size (sufficiently detailed to calculate percent weight in relation to phi size) at each station annually. During years one, two, three, and four of the permit dissolved sulfides (water soluble) (mg/kg) at four stations (C1, C6, Z2, and E6) and selected priority pollutants (see below) at nine stations (Z2, C1, C3, C6, C7, C8, C9a, D1 and E6) shall be analyzed. During the fifth year of the permit, ~~66~~ 64 sediment stations (~~26~~ 24 fixed stations plus both sets of 20 random stations) shall be sampled for priority pollutant analyses as indicated below.

Priority pollutants include:

Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Silver
Zinc
Total DDT
DDT derivatives [8]
Total PCB
PCB derivatives [9]
And Compounds on Local 303(d) list

c. Survey Sites - Sixty-four~~six~~ offshore benthic stations are identified in the sampling design (see Figure 2 and 3). This revised station array was accepted by the Regional Board and USEPA in December 1998 and implemented in January 1999 to better assess the impact on the benthic community as a result of full secondary treatment at Hyperion Treatment Plant. Stations were shifted from the previous equidistant, depth contour-based grid to a combination fixed station/random station array with ~~26~~ 24

stations from the old array and two sets of 20 randomly positioned stations to be sampled in alternate years. The stations shall be designated and located as shown below [Survey Sites - Benthic and Trawl Stations].

Survey Sites - Benthic and Trawl Stations

Station	Latitude*	Longitude*
Fixed grid station		
A1 (T)	~~33 33.986~~ 33 59.183	118 30.117
A2	~~33 33.919~~ 33 55.117	118 26.883
A3 (T)	~~33 33.868~~ 33 52.050	118 25.000
B1	~~34 34.007~~ 34 00.417	118 42.933
B3	~~34 34.006~~ 34 00.350	118 35.833
B5	~~33 33.966~~ 33 57.983	118 31.533
B6	~~33 33.941~~ 33 56.467	118 30.567
B7	~~33 33.921~~ 33 55.283	118 29.500
B8	~~33 33.897~~ 33 53.800	118 28.450
B10	~~33 33.841~~ 33 50.483	118 24.940
C1 (T)	~~33 33.997~~ 33 59.833	118 43.050
C3 (T)	~~33 33.990~~ 33 59.383	118 36.033
C5	~~33 33.953~~ 33 57.167	118 33.233
C6 (T)	~~33 33.928~~ 33 55.683	118 32.083
C7	~~33 33.893~~ 33 53.583	118 32.250
C8	~~33 33.879~~ 33 52.750	118 31.417
C9A (T)	~~33 33.855~~ 33 51.283	118 26.283
D1 (Benthic)	~~33 33.912~~ 33 54.700	118 33.000
~~T~~D1T** (T)	~~33 33.913~~ 33 54.805	118 32.215
E1	~~33 33.984~~ 33 59.057	118 42.867
E3	~~33 33.972~~ 33 58.317	118 36.867
E6	~~33 33.928~~ 33 55.700	118 33.417
E10	~~33 33.823~~ 33 49.405	118 27.880
Z1	~~33 33.915~~ 33 54.883	118 31.500
Z2 (T)	~~33 33.908~~ 33 54.450	118 31.467
Z3 (T)**	~~33 33.900~~ 33 54.005	118 30.395
Z4 (T)** to be dertemined		
Year 1 random stations		
NA1	~~33 33.890~~ 33 53.396	118 31.190
NA2	~~33 33.901~~ 33 54.054	118 30.907
NA3	~~33 33.903~~ 33 54.199	118 32.025
NA4	~~33 33.918~~ 33 55.061	118 30.380
NA5	~~33 33.919~~ 33 55.167	118 31.114
NA6	~~33 33.934~~ 33 56.041	118 31.636

Station	Latitude*	Longitude*
FA7	~~33 33.873~~ 33 52.397	118 29.837
FA8	~~33 33.878~~ 33 52.675	118 32.650
FA9	~~33 33.883~~ 33 52.981	118 29.263
FA10	~~33 33.886~~ 33 53.132	118 30.983
FA11	~~33 33.893~~ 33 53.594	118 30.105
FA12	~~33 33.898~~ 33 53.870	118 29.438
FA13	~~33 33.907~~ 33 54.398	118 34.130
FA14	~~33 33.915~~ 33 54.874	118 28.602
FA15	~~33 33.918~~ 33 55.073	118 33.387
FA16	~~33 33.933~~ 33 55.966	118 30.050

FA17	~~33 33.935~~ 33 56.086	118	33.208
FA18	~~33 33.944~~ 33 56.612	118	29.351
FA19	~~33 33.945~~ 33 56.671	118	32.167
FA20	~~33 33.953~~ 33 57.157	118	31.470
Random1A (T)** to be determined			
Random2A (T)** to be determined			
Random3A (T)** to be determined			

Year 2 random stations

NB1	~~33 33.905~~ 33 54.325	118	33.022
NB2	~~33 33.908~~ 33 54.490	118	30.105
NB3	~~33 33.915~~ 33 54.883	118	32.057
NB4	~~33 33.915~~ 33 54.905	118	30.594
NB5	~~33 33.921~~ 33 55.261	118	32.981
NB6	~~33 33.927~~ 33 55.620	118	29.888
NB7	~~33 33.928~~ 33 55.670	118	31.887
NB8	~~33 33.937~~ 33 56.212	118	30.826
FB9	~~33 33.875~~ 33 52.493	118	31.105
FB10	~~33 33.884~~ 33 53.017	118	29.854
FB11	~~33 33.885~~ 33 53.087	118	33.191
FB12	~~33 33.887~~ 33 53.249	118	30.759
FB13	~~33 33.888~~ 33 53.282	118	29.015
FB14	~~33 33.894~~ 33 53.616	118	33.900
FB15	~~33 33.903~~ 33 54.194	118	28.841
FB16	~~33 33.918~~ 33 55.102	118	29.375
FB17	~~33 33.937~~ 33 56.220	118	33.825
FB18	~~33 33.940~~ 33 56.407	118	29.231
FB19	~~33 33.945~~ 33 56.690	118	31.871
FB20	~~33 33.948~~ 33 56.858	118	30.287
Random1B (T)** to be determined			
Random2B (T)** to be determined			
Random3B (T)** to be determined			

* Given in decimal minutes
** Trawl site only
(T) Trawl stations

2. Local Benthic Mapping Survey

   a. Sampling Design - The benthic monitoring station array utilized for the past few years was designed as a fixed station/random station combination, incorporating 26 stations from the old sampling array and two sets of 20 newly designated randomly positioned stations. These stations shall be sampled in alternate years for the purposes of monitoring benthic infaunal community and sediment chemistry changes resulting from the implementation of full secondary treatment at Hyperion Treatment Plant. The goal is to develop a better depiction of any impact footprint resulting from the discharge using a probabilistic monitoring approach.

   b. The discharger shall evaluate monitoring data collected between January 1999 and December 2003 using a fixed station/random station combination, and any other relevant data, to assess the mapping ability of this benthic station array. The goal is to determine if the spatial coverage is appropriate to adequately delineate any changes and describe the extent of the footprint of any impacts. Following the analysis, the station array will be assessed and any recommendations for change will be submitted to the Executive Officer of the Regional Board and USEPA Region IX.

3. Regional Benthic Survey

   a. This regional survey addresses the questions: 1) "What is the extent, distribution, magnitude and trend of ecological change in soft-bottom benthic habitats within the Southern California Bight?"; and 2) "What is the relationship between biological response and contaminant exposure?" The data collected will be used to assess the condition of the sea-floor environment and the health of the biological communities in the Bight.

   b. Sampling Design - A regional survey of benthic conditions within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight'03 benthic survey by participating in or performing the following activities:

      Participation on the Steering Committee
      Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, Benthos, and Chemistry)
      Field sampling at sea
      Infaunal sample analysis
      Sediment chemistry analysis

Data management

This level of participation was consistent with that provided by the Discharger during the 1998 Regional Benthic Survey. The next regional survey is expected to take place in 2008 and the Discharger's level of participation shall be consistent with that provided in previous surveys.

D. Fish and Invertebrate (Trawl) Monitoring

1. Local Demersal Fish and Invertebrate Survey

a. This survey addresses the question: "Is the health of demersal fish and epibenthic invertebrate communities in the vicinity of the discharge changing over time?" The data collected are used for regular assessment of temporal trends in community structure along an array of sites within the influence of the discharge. Data will also be collected on trash and debris to contribute to the SMBRP's Sources and Loadings program.

b. Sampling Design - Trawling stations shall be sampled semi-annually in winter (January – March) and summer (July – September) following benthic sampling for demersal fish and epibenthic invertebrates following protocols described in the most recent Bight Regional Marine Monitoring Survey ~~Bight'98~~ Field Operations Manual.

All organisms captured shall be identified to the lowest possible taxon and counted. Fish shall be size-classed. Wet-weight biomass shall be estimated for all species. Each individual captured shall be examined for the presence of externally evident signs of disease or anomaly. Estimates of type, quantity and weight of trash and debris in each trawl shall be made. Community analysis[10] shall be conducted for fish and macroinvertebrates for each station. Mean, range, standard deviation, and 95% confidence limits, if appropriate, shall be reported for the values determined in the community analysis. The Discharger may be required to conduct additional statistical analyses to determine temporal and spatial trends in the marine environment.

c. Survey Sites - Thirteen offshore trawling stations in a combined fixed station/random station array including seven stations from the fixed array (C1, C3, C6, ~~T~~D1T, Z2, Z3, and Z4,) and two sets of three randomly positioned stations shall be sampled in alternate years. ~~Two fixed stations must be replicated (C1 and Z2).~~ Station Z4 and random station positions will be determined following final adoption of the permit (see Survey Sites - Benthic and Trawl

Stations table in Benthic Sediments Monitoring section above and Figure 4).

2. Regional Demersal Fish and Invertebrate Survey

a. This regional survey addresses the questions: "What is the extent, distribution, magnitude and trend of ecological change in demersal fish and epibenthic invertebrate communities within the Southern California Bight?" and "What is the relationship between biological response and contaminant exposure?" The data collected will be used to assess the condition of the sea-floor environment and health of biological resources in the Bight.

b. Sampling Design - A regional survey of trawl-caught demersal fish and epibenthic invertebrates within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by the participants as represented in the Regional Steering Committee. The Discharger provided support to the Bight'03 survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, Fish & Invertebrates)
Field sampling at sea
Tissue chemical analysis
Data management

This level of participation was consistent with that provided by the Discharger during the 1998 Regional Survey. The next regional survey is expected to occur in 2008 and the Discharger's level of participation shall be consistent with that provided in previous surveys.

E. Bioaccumulation Monitoring

1. Local Bioaccumulation Trends Survey

a. This survey addresses the question: "Are fish tissue contamination levels in the vicinity of the outfall changing over time?" The data collected are used for regular assessment of temporal trends in horneyhead turbot tissue.

b. Sampling Design - Three offshore zones plus the nearfield shall be sampled by trawl annually within Santa Monica Bay. Horneyhead turbot fish muscle and liver tissue shall be analyzed for the purpose of bioaccumulation trends.

For fish tissue analysis, one composite sample of ten horneyhead turbot individuals will be collected annually within four zones[11,12]. Samples may be taken from any station within each zone.

Tissue, as applied to the analysis of priority pollutants as listed below, signifies separate analyses for muscle and liver for horneyhead turbots. All tissue samples shall be analyzed for:

% moisture
% lipid
Arsenic
Selenium
Mercury
Total DDT [13]
DDT derivatives [8]
Total PCB [14]
PCB derivatives [9]

c. Survey Sites (see Figure 5). Sampling zones are defined as follows:

~~Zone 3 (northwest Palos Verdes Shelf): Inshore of the 150-meter depth contour and between a line bearing 225° magnetic off the southern face of Palos Verdes Point and a line bearing 235° magnetic off the south end of the Redondo Beach Pier. This zone includes the northwest Palos Verdes Shelf (the area inshore of the southern side of the Redondo Canyon), including the deep-water rockfishing areas west of Palos Verdes Point.~~

Zone 4 (south Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 235° magnetic off the south end of the Redondo Beach Pier and a line bearing 240° magnetic off the south entrance of Marina Del Rey. This zone includes the Redondo Piers, the north rim of the Redondo Canyon, Short Bank, and the 1-, 5- and 7-mile Hyperion outfalls.

Zone 5 (north Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 240° magnetic off the south entrance of Marina del Rey and a line bearing 180° magnetic off Point Dume. This zone includes the Santa Monica beaches, Venice and Santa Monica Piers, Paradise Cove and most of Point Dume Canyon.

Nearfield: A 2-km radius around the 5-mile outfall (Discharge Serial No. 002)

2. Local Seafood Safety Survey

a. Surveys shall include sampling within ~~three~~ two zones in Santa Monica Bay to answer two questions: 1) "Where seafood consumption advisories exist locally, do tissue concentrations of contaminants continue to exceed the Advisory Tissue Concentration (ATC)?"; and 2) "What are tissue contaminant trends relative to the ATC in other species and for other contaminants not currently subject to local consumption advisories?" The data collected will be used to provide information necessary for the management of local seafood consumption advisories.

b. Sampling Design – A regionally coordinated survey covering Santa Monica Bay employing the sampling design proposed by the SMBRP (Development of Comprehensive Monitoring Program, Santa Monica Bay Restoration Project, October 2000).

One species from each of five groups of fish (rockfish, kelpbass, sandbass, surfperches and croakers) shall be sampled from each of the ~~three~~ two zones in years one, three and five. For rockfishes, scorpionfish (*Scorpaena guttata*) is the preferred species, followed by bocaccio (*Sebastes paucispinis*) and then by any other abundant and preferably benthic rockfish species. For surfperches, black surfperch (*Embiotoca jacksoni*) is the preferred species, followed by white surfperch (*Phanerodon furcatus*), and then by walleye surfperch (*Hyperprosopon argenteum*).

For fish tissue analysis, one composite sample of ten individuals of each target will be collected within each of the ~~three~~ two zones[~~10~~,11, 12]. Sampling should take place within the same season of the year (preferably late summer/early fall) and should focus upon a consistent size class of fish. All tissue samples shall be analyzed for:

% moisture
% lipid
Arsenic
Selenium
Mercury
Total DDT [13]
DDT derivatives [8]
Total PCB [14]
PCB derivatives [9]

c. Survey Sites (see Figure 5). Sampling zones are defined as follows:

~~Zone 3 (northwest Palos Verdes Shelf): Inshore of the 150-meter depth contour and between a line bearing 225° magnetic off the southern face of Palos Verdes Point and a line bearing 235° magnetic off the south end of the Redondo Beach Pier. This zone includes the northwest Palos Verdes Shelf (the area inshore of the southern side of the Redondo Canyon), including the deep-water rockfishing areas west of Palos Verdes Point.~~

Zone 4 (south Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 235° magnetic off the south end of the Redondo Beach Pier and a line bearing 240° magnetic off the south entrance of Marina Del Rey. This zone includes the Redondo Piers, the north rim of the Redondo Canyon, Short Bank, and the 1-, 5- and 7-mile Hyperion outfalls.

Zone 5 (north Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 240° magnetic off the south entrance of Marina del Rey and a line bearing 180° magnetic off Point Dume. This zone includes the Santa Monica beaches, Venice and Santa Monica Piers, Paradise Cove and most of Point Dume Canyon.

3. Regional Seafood Safety Survey

a. This regional survey addresses the question: “Are seafood tissue levels within the Southern California Bight below levels that ensure public safety?” The data collected will be used to assess levels of contaminants in the edible tissue of commercial or recreationally important fish within the Bight relative to Advisory Tissue Concentrations.

b. Sampling Design - A regional survey of edible tissue contaminant levels in fish within the Southern California Bight shall be conducted at least once every ten years, encompassing a broader set of sampling sites and target species than those addressed in the local seafood survey. The objective is to determine whether any unexpected increases or decreases in contaminant levels have occurred in non-target species and/or at unsampled sites. The final survey design may be determined cooperatively by participants represented on a Regional Steering Committee or by the State of California’s Office of Environmental Health and Hazard Assessment. The Discharger shall provide support to a Regional Seafood Safety Survey by participating in or performing the following activities:

Participation on a Steering Committee
Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, and Chemistry)
Field sampling at sea
Tissue chemical analysis
Data management

The Discharger's participation shall be consistent with that provided by the Discharger to similar regional bioaccumulation surveys.

4. Regional Predator Risk Survey

a. This regional survey addresses the question: "Are fish body burdens within the Southern California Bight a health risk to higher trophic levels in the marine food web?" The data collected will be used to estimate health risk to marine birds, mammals and wildlife from the consumption of fish tissue.

b. Sampling Design - A regional survey of whole fish body burdens of contaminants within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight'03 Predator Risk Survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, and Chemistry)
Field sampling at sea
Tissue chemical analysis

This level of participation was consistent with that provided by the Discharger to the 1998 Regional Predator Risk Survey. The next regional survey is expected to occur ~~until~~ in 2008 and the discharger's level of participation shall be consistent with that provided in previous surveys.

5. Kelp Bed Monitoring

This regional survey is to address the question: "Is the extent of kelp beds in the Southern California Bight changing over time and are some beds changing at rates different than others?" The data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to the discharge to be compared to regional trends.

The regional survey primarily will consist of quarterly aerial overflights of the kelp beds. The Discharger shall provide up to $10,000 per year in financial support to the regional kelp monitoring program (annual level of support will depend on the number of participants in the program). The Discharger shall participate in the regional management and technical committees responsible for the development of the survey design and the assessment of kelp bed resources in the Bight.

Participation in this survey provides data to the SMBRP's Kelp Beds program.

Footnotes for Receiving Water Monitoring Program

[1] The annual ~~S~~s~~ample~~s shall be taken ~~at least once per week~~ in the summer quarter.

[2] Discrete sampling for ammonia nitrogen, fecal coliform (or *E. coli*), total coliform and enterococcus shall be done ~~at the surface~~ within 1 m (3.1 ft) and below the surface at 15.0 m (49.2 ft), 30.0 m (98.4 ft), and 45.0 m (147.6 ft) (or as deep as practical for those stations located in depths less than 45 m).

[3] Depth profile measurements will be obtained by using multiple sensors to measure parameters through the entire water column (from the surface to as close to the bottom as practicable).

[4] Receiving Water Observations of water color, turbidity, odor, and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rocks and jetties, or beach structures shall be made and recorded at stations ~~or while in transit~~. The character and extent of such matter shall be described. The dates, times and depths of sampling and these observations shall also be reported.

[5] The "Daily Maximum" value shall be reported during periods of discharge.

[6] Bottom sampling shall be done 2.0 m (6.6 ft) above the seabed.

[7] Community ~~structure~~ analysis of benthic infauna shall include ~~estimates of wet weight of each taxonomic group (molluscs, echinoderms, polychaetes, crustaceans, and all other infauna),~~ number of species, number of individuals per species, total numerical abundance per station, benthic response index (BRI) and biological indices, plus utilize appropriate regression analyses, parametric and nonparametric statistics, and multivariate techniques or other appropriate analytical techniques. ~~species abundance per grab, species richness, species diversity, species evenness, classification analyses (i.e., phenetic or cladistic), or other appropriate multivariate statistical techniques approved by the Executive Officer and USEPA, and the Infaunal Trophic Index.~~

[8] At a minimum, 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD, and 2,4'-DDD.

[9] At a minimum, chlorinated biphenyl congeners whose analytical characteristics resemble those of PCB-18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206 shall be individually quantified.

[10] Community analysis of fish and macroinvertebrates shall include wet weight of fish and macroinvertebrate species (when combined weight of individuals of one species exceed ~~0.2~~ 0.1 kg), standard length of each individual fish, number of species, number of individuals per species, total numerical abundance per station, number of individuals in each 1-cm size class for each species of fish, species abundance per trawl and per station, and biological indices, plus utilize appropriate regression analyses, parametric and nonparametric techniques, and multivariate techniques or other appropriate analytical techniques. ~~species richness, species diversity, species evenness, classification analyses (i.e., phenetic or cladistic), or other appropriate multivariate statistical techniques approved by the Executive Officer and USEPA.~~

[11] Where appropriate, individuals ~~(from trawls)~~ collected for both local bioaccumulation trends or local seafood safety comprising the smallest 10 percent by weight shall not be used as part of the composite sample. Individuals for tissue analysis shall be randomly selected from the remaining organisms. It may not be ~~im~~possible to collect the required number of fish every year at each zone. If fish of the target size are absent in a given zone, additional sampling effort ~~trawls~~ need not be attempted. If target size fish are present in a given zone, one additional sampling event ~~trawl~~ shall be conducted to attempt to collect the necessary number of individuals.

[12] Tissue samples removed from individuals shall be of uniform weight.

[13] Total DDT means the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[14] Total PCBs (polychlorinated biphenyls) mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-l232, Aroclor-1242, Aroclor-l248, Aroclor-1254 and Aroclor-1260.

VIII. OUTFALL AND DIFFUSER INSPECTION

A. This survey answers the question: "Are the outfall structures in serviceable condition ensuring their continued safe operation?"

B. Survey Design: Each ocean outfall (001 and 002) shall be externally inspected a minimum of once a year. Inspections shall include general observations and photographic/videographic records of the outfall pipes and adjacent ocean bottom. The pipes shall be visually inspected by a diver, manned submarine, or remotely operated vehicle. A summary report of the inspection findings shall be provided. This written report, augmented with videographic and/or photographic images, will provide a description of the observed condition of the discharge pipes from shallow water to their respective termini.

IX. SLUDGE MONITORING AND REPORTING

A. The Discharger must comply with all requirements of 40 CFR 257, 258, 501, and 503, including all applicable monitoring, record keeping, and reporting requirements.

B. The Discharger must comply with the monitoring and reporting requirements outlined in Attachment B in this Order and permit, [*Biosolids/Sludge Management].*

X. HAULING REPORTS

A. In the event wastes are transported to a different disposal site during the reporting period, the following shall be reported:

1. Types of wastes and quantity of each type;

2. Name and either the address or the State registration number for each hauler of wastes (or the method of transport if other than by hauling); and

3. Location of the final point(s) of disposal for each type of wastes.

B. If no wastes are transported off site during the reporting period, a statement to that effect shall be submitted.

XI. REPORTING SCHEDULE

The above monitoring program, or subsequent modification thereto, shall become effective upon the effective date of Order No. R4-2004-xxxx and NPDES Permit No. CA0109991. Influent/effluent monitoring reports, receiving water monitoring reports, and other required reports shall be submitted as indicated under section II. of the above monitoring program.

All reports shall be signed by a responsible officer or duly authorized representative (as specified in 40 CFR 122.2) of the City of Los Angeles Hyperion Treatment Plant and submitted under penalty of perjury.

Ordered by:

Jonathan Bishop,
Executive Officer
California Water Quality Control Board
Los Angeles Region

Date:_____

Alexis Strauss,
Director
Water Division
USEPA Region IX

Date: _____

Figure 1. Offshore water quality station locations.

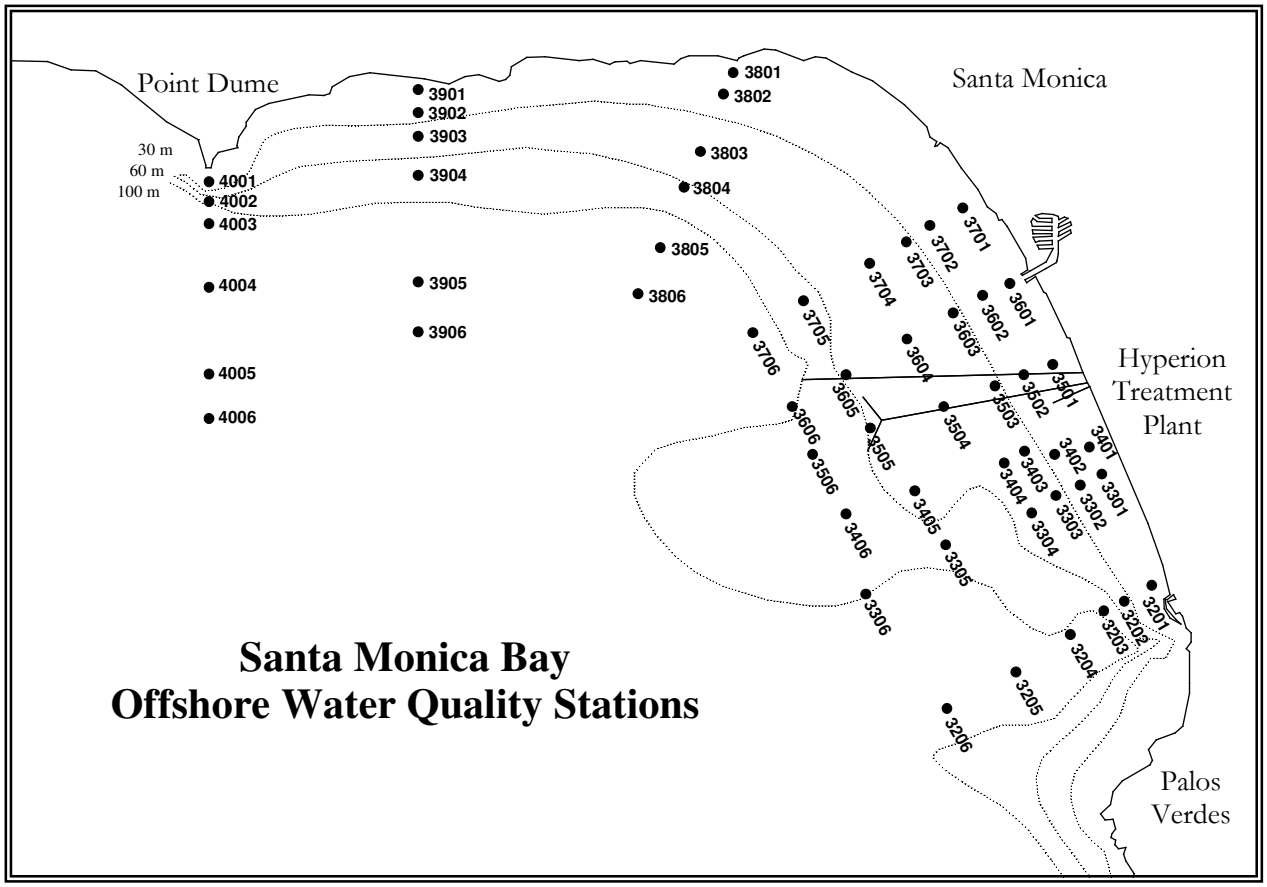

Figure 2. Offshore benthic sediment and macrofauna station locations for fixed stations plus Year 1 random stations.

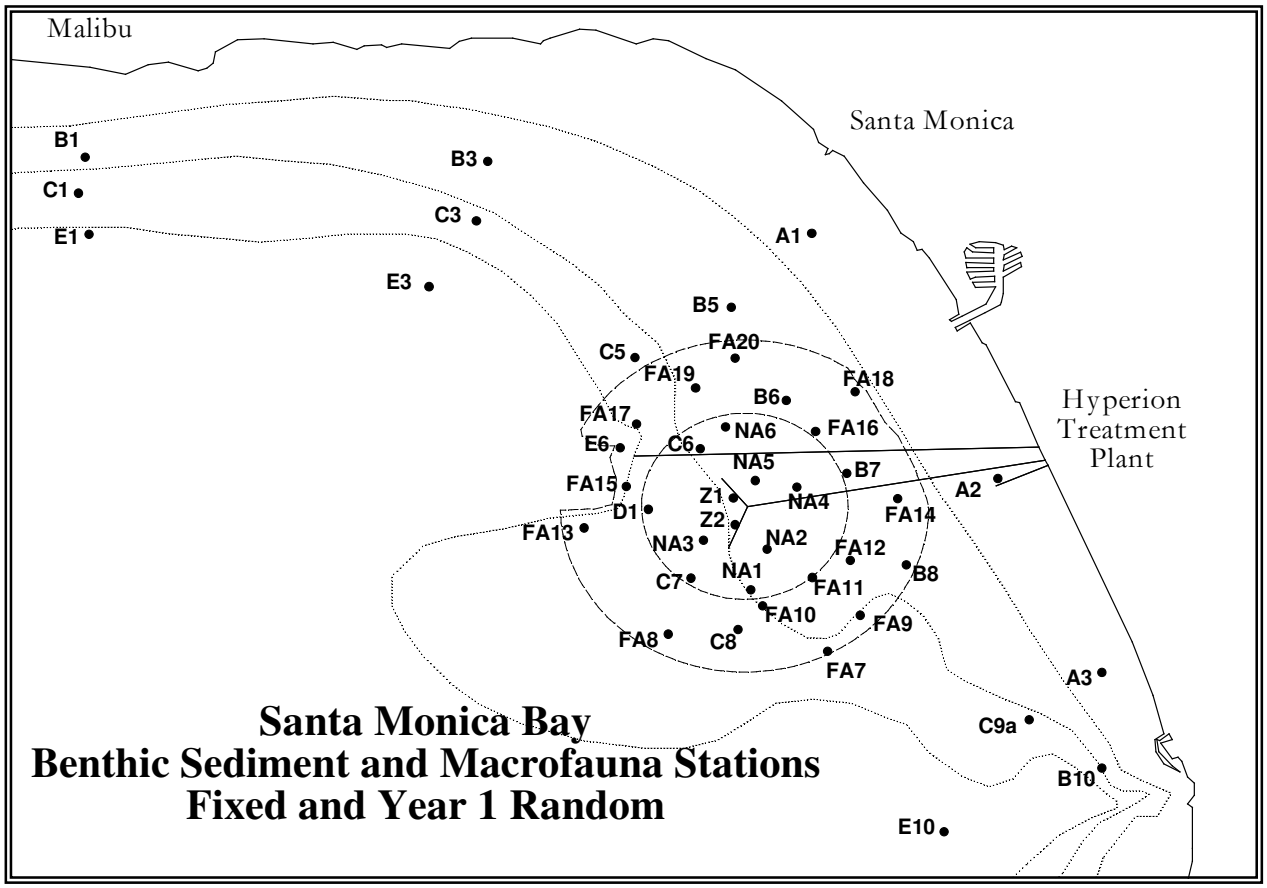

Figure 3. Offshore benthic sediment and macrofauna station locations for fixed stations plus Year 2 random stations.

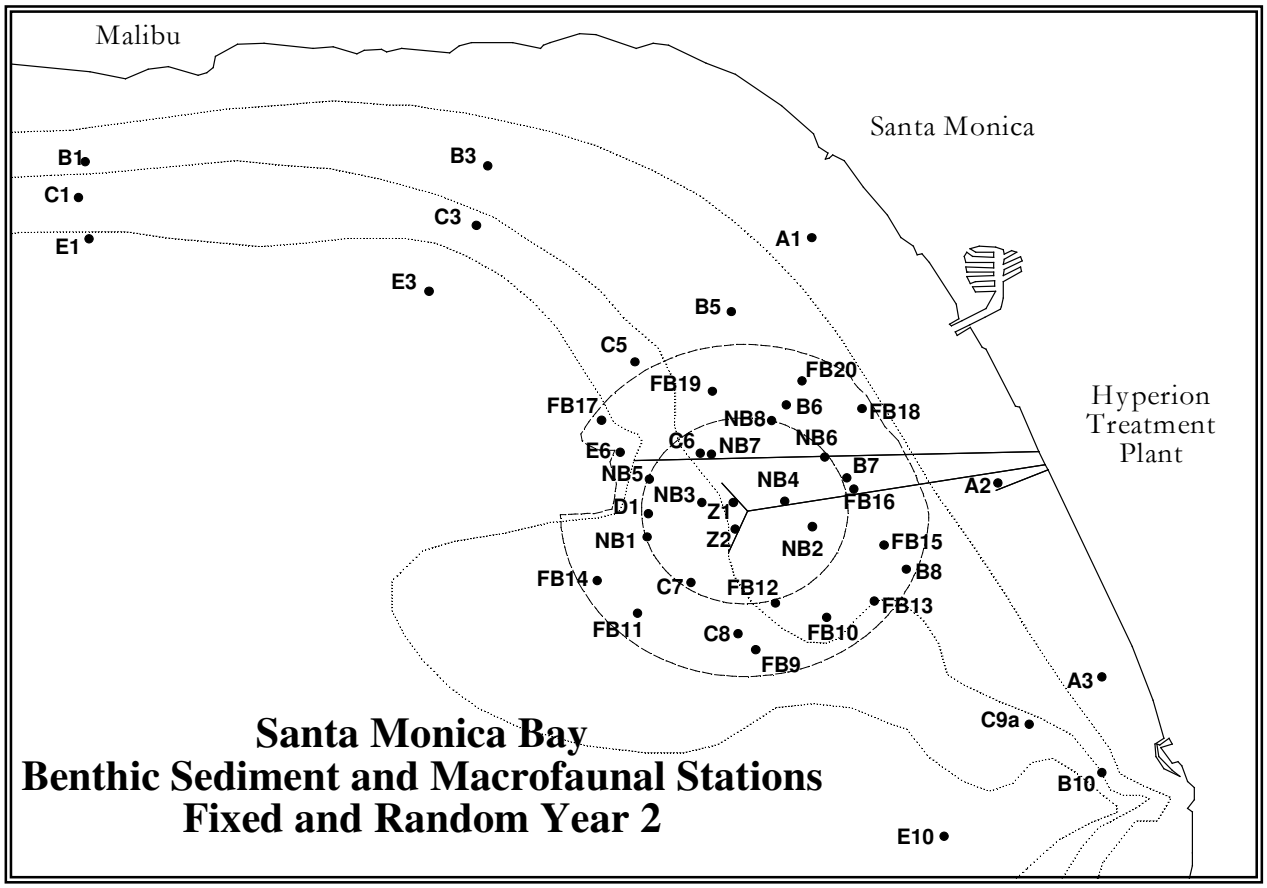

Figure 4. Trawl station locations including fixed stations and example of a combined array of Year 1 and Year 2 random stations.

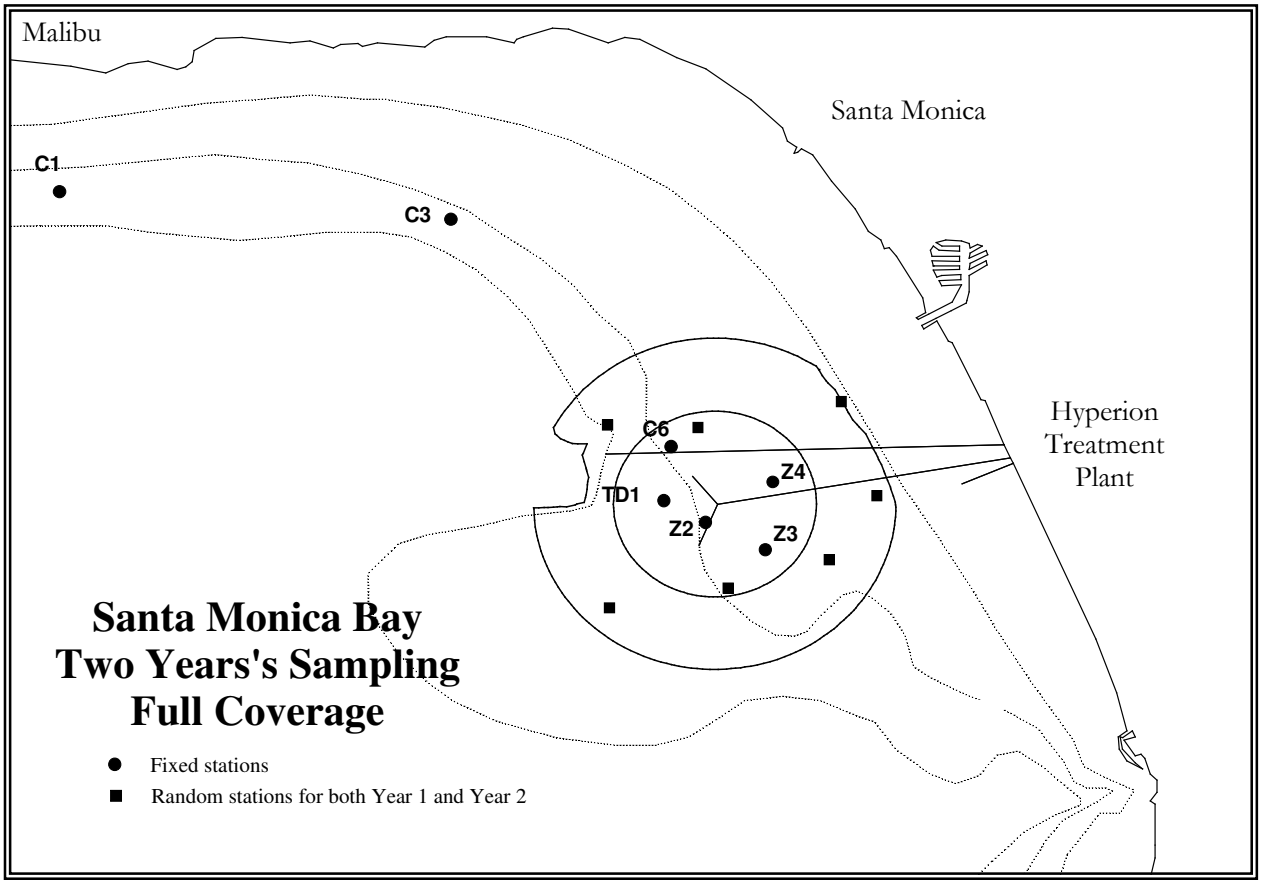

Figure 5. Local seafood survey zones as defined by SMBRP seafood tissue monitoring design.